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BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

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INTRODUCTION

In 1988, Georgia along with thirty-seven other participating states conducted random-telephone surveys as part of the Behavioral Risk Factor Surveillance System (BRFSS). Co-sponsored by the Centers for Disease Control and the Division of Public Health's Office of Epidemiology, these surveys assess the prevalence of a variety of personal health practices and behaviors among the adult population (ages 18+). The surveys began in Georgia in 1984. Detailed analyses of 1984-1986 and 1987 data have been published previously.

Health professionals using BRFSS data can target adults who are most at risk for poor health outcomes and develop intervention and prevention programs accordingly. BRFSS data may also be used as a planning tool to set state health objectives, to document the need for programmatic funding, and to monitor the progress of state health efforts.

This report analyzes the results of the 1988 BRFSS survey for the following variables: smoking, hypertension, obesity, alcohol use, sedentary lifestyle, seatbelt non-use and preventive health practices concerning AIDS. When possible, results are presented by age, race, sex, and socio-economic status. Each risk factor is organized by section which includes a brief discussion of associated health risks.

Numbers appearing in the text have been rounded to the nearest whole integer. Trends in overall prevalence estimates of risk behaviors among Georgians by year are presented in bar graphics.

METHODOLOGY

Telephone surveys have been established as a reliable and affordable method for determining the prevalence of behavioral risk factors in a population.

Beginning in 1981, the Centers for Disease Control (CDC) and various state health departments, including Georgia, began to develop a system for estimating the prevalence of behavioral risk factors in the population using random digit-dialed telephone surveys . The goal of this system was to provide behavioral risk factor data which could be used to plan, implement, monitor, and assist in the evaluation of health programs. In 1984, Georgia applied for and received a federal grant to initiate a state-based system for self-reported behaviors of personal health practices. Georgia has continued to participate in this telephone interview system since 1984

Interviews for the selected behaviors are conducted during one week each month, thus providing annual estimates that are seasonally adjusted.

SAMPLING: Telephone numbers are randomly generated by CDC using the first 8 digits of the 10 digit telephone number. A "cluster" of 100 telephone numbers is produced on a random basis using the last two digits of the 10 digit number. These numbers are then provided to the Georgia Behavioral Risk Factor Surveillance System for initiation into the screening sample. The clusters are screened by calling one randomly selected number. If this number is a residence, the entire cluster of 100 numbers is accepted for use. If the number is a non-working number, or is a business phone, the entire cluster is rejected. The goal is to complete three interviews from each "cluster" of 100 numbers. The interviewee is chosen through a selection process that considers all persons residing in the household who are 18 years of age or older.

INTERVIEWS: Surveys consist of approximately 70 questions regarding personal behaviors related to seatbelt usage, smoking, alcohol usage, AIDS knowledge, exercise, hypertension and demographic data. Interviews are conducted primarily during week nights, but some interviews are completed during daytime hours and on Saturdays and Sundays. Four outcomes are possible when a phone number is dialed: 1) a completed interview, 2) a refusal to be interviewed, 3) a busy line, 4) or a non-working number or no answer after several rings.

The Computer-Assisted Telephone Interview (CATI) system allows all responses to be keyed directly into the computer for later editing. At the end of each interviewing session, responses are transferred to CDC by floppy disk where data are tabulated and weighted to provide compiled and representative population-based estimates of risk factor prevalence.

Questionnaires used by the states participating in the CATI system are a composite of questions agreed upon by representatives of all participating states. Each state may add additional state-based questions if desired. During 1988, the Georgia BRFSS completed 1,503 interviews for an average of 125 completed interviews per month.

HYPERTENSION

Persons with low-income and low educational achievement were more likely to report problems with high blood pressure than those with higher income and education.

NOTE:

Data on hypertension are inconsistent with data obtained in previous years suggesting that these data may have been unduly influenced by oversampling urban areas in 1988.

CURRENT HYPERTENSION

Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

Associated Risks:
heart attack, stroke, kidney disease

Hypertension is a chronic condition that is a major risk factor for heart disease and stroke. In 1988, 15% of Georgia's adult population was at risk for current hypertension compared to 20% in 1987 (Figure 1). Whites reported higher prevalence rates for current hypertension than Non-Whites [(Blacks and Hispanics) (16% vs. 10%)]; and slightly more females revealed blood pressure problems than males (15% vs. 14%).

As expected, the prevalence of hypertension increased with age. Young adults reported lower percentages for high blood pressure (3%), while middle and older adults were at greater risk, reporting rates of 16% and 38%, respectively (Table 1).

Figure 1

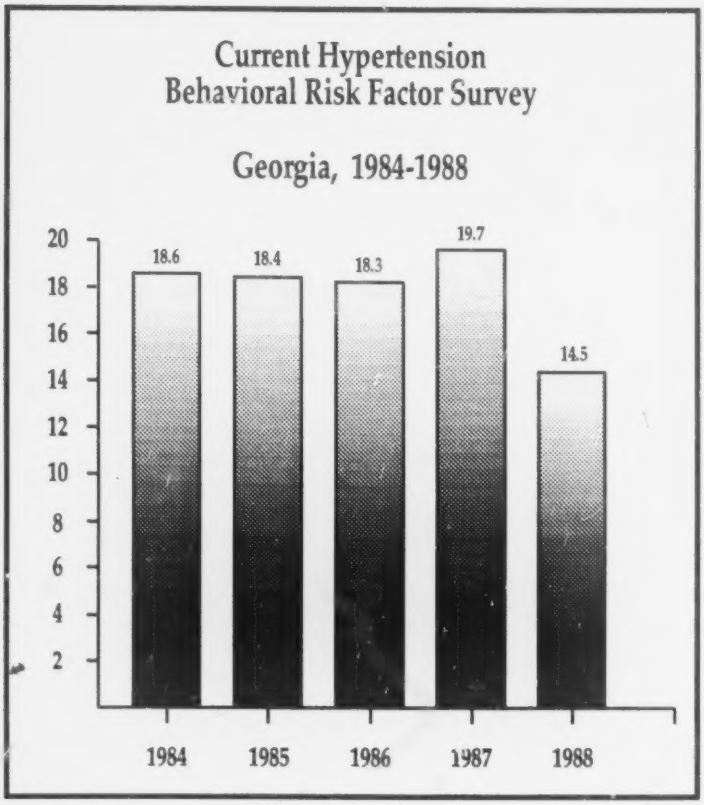


Table 1

Prevalence of Current Hypertension
by Selected Characteristics
Behavioral Risk Factor Surveillance System

Georgia 1988

Characteristic	Prevalence (%)
Total	14.5
Sex	
Male	13.6
Female	15.3
Race	
White	16.1
Non-white	10.2
Age	
18-34	3.3
35-54	16.1
55 +	37.9
Income	
< 10,000	18.7
10-20,000	16.5
20-35,000	15.7
> 35,000	12.3
Education	
< 9th grade	17.4
Some high school	23.0
High school grad	18.9
Beyond high school	11.3

In general, an inverse relationship was observed between current hypertension and socio-economic status. Respondents categorized in the higher income brackets and those with education beyond high school were less likely to experience current hypertension, while those with less income and lower educational status reported higher prevalence rates (Table 1).

SEDENTARY LIFESTYLE

Only eight percent of Georgians engaged in the recommended minimal levels of physical activity which benefit health.

SEDENTARY LIFESTYLE

Respondents who reported either no physical activity or physical activity less than three times per week and/or less than 20 minutes per occasion. (This criterion level represented the minimum amount of exercise needed to reap health benefits and was based on the 1990 Objectives for the Nation).

Associated Risks:
cardiovascular disease, diabetes, anxiety, depression

Physical activity is associated with reduced risk of coronary heart disease, non-insulin dependent diabetes mellitus, hypertension, and osteoporosis[1]. Regular physical activity can also enhance weight control and reduce symptoms of anxiety and depression[2,3]. In spite of the known health benefits derived from routine physical activity, many Georgians fail to exercise.

In 1988, 62% of Georgians surveyed by the BRFSS led sedentary or inactive lifestyles, which was somewhat less than the percentage of adults polled in 1987 (64%) (Figure 1). While 30% of the respondents in 1988 engaged in regular physical activity, only 8% exercised enough to meet the 1990 Objective for the Nation's criterion level necessary for cardiovascular fitness.

Figure 1

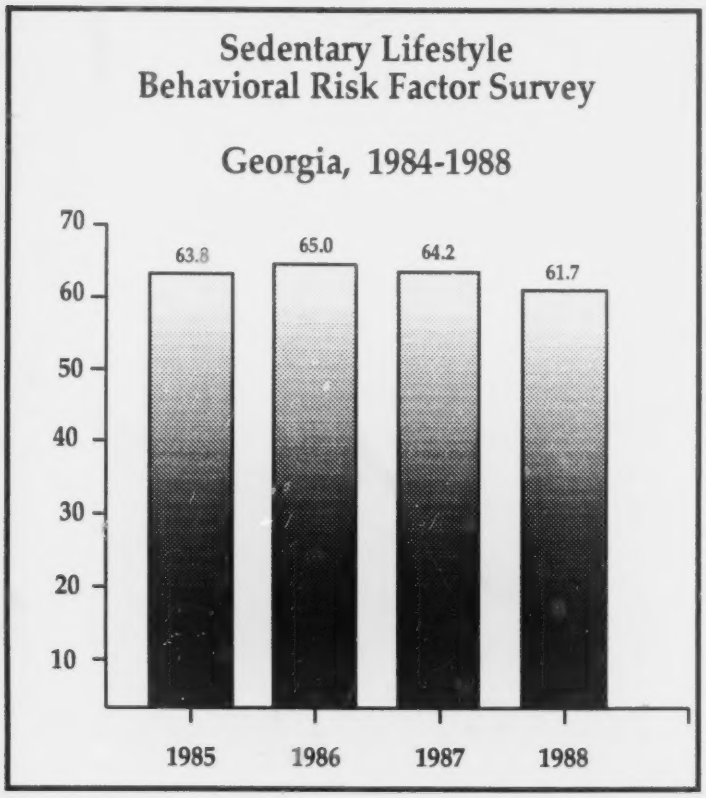


Table 1

Prevalence of Current Sedentary Lifestyle by Selected Characteristics Behavioral Risk Factor Surveillance System

Georgia 1988

Characteristic	Prevalence (%)
Total	61.7
Sex	
Male	59.1
Female	64.0
Race	
White	58.7
Non-white	69.9
Age	
18-34	53.5
35-54	63.3
55 +	77.8
Income	
< 10,000	62.7
10-20,000	71.7
20-35,000	62.6
> 35,000	54.1
Education	
< 8 years	93.4
9-12 years	83.9
12 years	70.4
> 12 years	52.8

Survey results also showed that females were more likely than males to lead sedentary lifestyles and older adults were more prone to inactivity than younger adults. The income group > $35,000 had the lowest prevalence (54%) of sedentary lifestyle (Table 1). When physical activity did occur, walking was the preferred activity (34%), followed by running (11%) and aerobics (10%). These data are similar to results in previous years.

References

1. Siscovick, DS, Laporte, RE, Newman, J M. The disease-specific benefits and risks of physical activity and exercise. Public Health Reports 1985; 100(2):180-188.

2. Blair SN, Jacobs DR Jr., Powell, DE. Relationships between exercise or physical activity and other health behaviors. Public Health Reports 1985;100:172-180.

3. Taylor BC, Sallis JF, Needle, R. The relation of physical activity and exercise to mental health. Public Health Reports 1985;100 (2): 212-224.

SEATBELT NON-USE

While the majority of Georgians did not regularly wear seatbelts in 1987, there has been a significant decrease in the proportion of non-users since passage of the mandatory seatbelt use law in Georgia.

SEATBELT NON-USE

Respondents who reported using seatbelts sometimes, seldom or never.

Associated Risks:
injury (especially head and spine), disability, premature death

The number of Georgians reporting seatbelt non-use has decreased significantly since the Mandatory Seatbelt Use Law became effective in Georgia in 1988. Thirty-four percent of respondents in the 1988 BRFS did not wear seatbelts on a regular basis, compared to 53% in the 1987 BRFS (Figure 1). Males reported a higher prevalence of non-use than females and Non-white respondents reported a higher prevalence of non-use than White respondents. Middle-aged adults (35-54) were most likely to use seatbelts; whereas, older adults (55+) were least likely (Table 1).

Figure 1

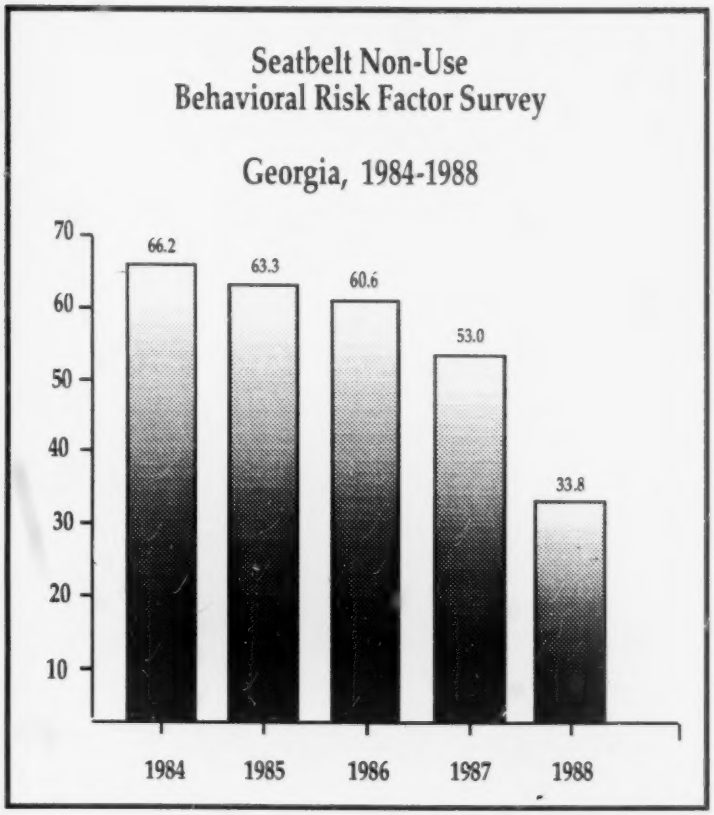


Table 1

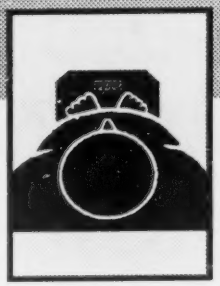
Prevalence of Current Seatbelt Non-Use
by Selected Characteristics
Behavioral Risk Factor Surveillance System

Georgia 1988

Characteristic	Prevalence (%)
Total	33.8
Sex	
Male	41.8
Female	26.8
Race	
White	31.3
Non-white	40.9
Age	
18-34	33.4
35-54	28.5
55 +	46.3
Income	
< 10,000	38.3
10-20,000	45.2
20-35,000	39.2
> 35,000	25.0
Education	
< 8 years	70.8
9-12 years	50.0
12 years	45.2
> 12 years	24.4

Those participants with annual incomes of more than $35,000 had a significantly lower prevalence of seatbelt non-use than other income groups. The prevalence of seatbelt non-use was inversely proportional to the level of education so that respondents with less than 8 years of education reported the highest percentage (71%) of seatbelt non-use. The prevalence has decreased in all groups since the 1987 Behavioral Risk Factor Survey with the most significant change occurring in respondents with more than 12 years of education (41% in 1987 vs. 24% in 1988) (Table 1).

OBESITY



Since 1984, no clear trend for obesity in Georgia has emerged. Obesity most frequently occurs in those respondents with lower levels of education.

Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of Weight for Height . Calculations for ideal body weight were based on self-reported weight and height.

Associated Risks:
hypertension, cardiovascular disease, diabetes mellitus, cancer, degenerative joint disease

The prevalence of obesity has fluctuated since 1984, with no clear trend emerging. Twenty-two percent of Georgians surveyed in 1988 reported being overweight. The prevalence of obesity was higher among females than males, and higher among Non-White than White respondents in 1988. The ethnic trend was similar to prior years, but males were reported to have a higher prevalence of obesity than females both in 1986 and 1987. Younger adults (18-34) reported a significantly lower percentage (12%) of obesity than other adult groups. Older adults (55+) reported the highest percentage of obesity (39%) (Table 1). These results were consistent with prior years

Figure 1

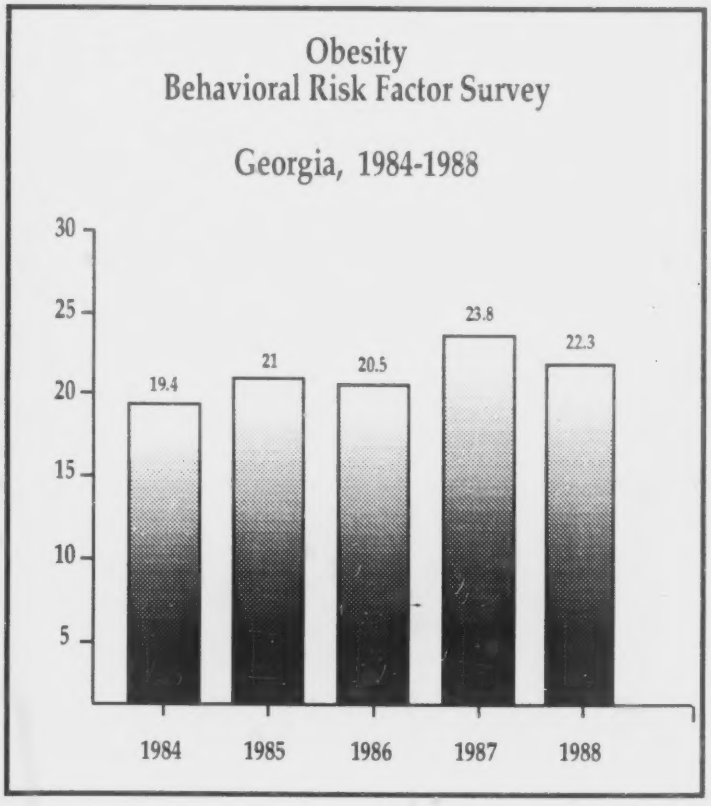


Table 1

Prevalence of Obesity
by Selected Characteristics
Behavioral Risk Factor Surveillance System

Georgia 1988

Characteristic	Prevalence (%)
Total	22.3
Sex	
Male	20.6
Female	23.8
Race	
White	18.3
Non-white	33.3
Age	
18-34	11.5
35-54	26.7
55 +	38.5
Income	
< 10,000	23.8
10-20,000	22.8
20-35,000	24.5
> 35,000	19.2
Education	
< 8 years	38.4
9-12 years	41.7
12 years	27.4
> 12 years	16.7

The prevalence of obesity was highest in the groups reporting annual household incomes of $35,000 or less, and in those having 12 years or less of formal education (Table 1).

SMOKING

Georgia is nearing the National goal of < 25% current smokers.

SMOKING

Current Smoker:

A respondent who smoked at least 100 cigarettes in his or her lifetime and was still smoking.

Former Smoker:

A respondent who was not currently smoking, but who reported having smoked > 100 cigarettes during his or her lifetime.

Associated Risks:
lung cancer, heart disease, stroke, pregnancy complications, increased morbidity from respiratory infections

The prevalence of current smokers in Georgia decreased from 31% in 1984 to 25% in 1987 and 1988 figures remain essentially unchanged from the previous year. Overall, smoking prevalence has approached the national goal of < 25% for the last two consecutive years.

Figure 1

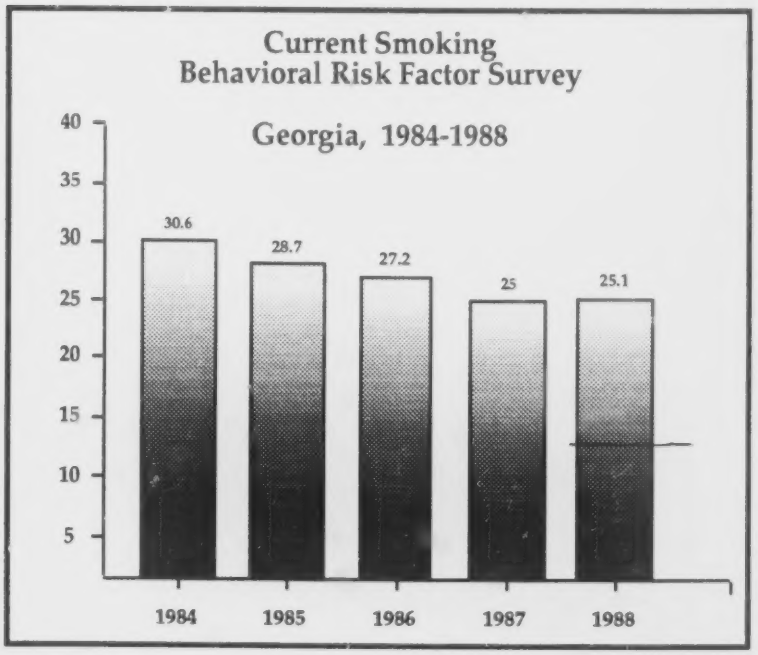


Table 1

Prevalence of Current Cigarette Smoking
by Selected Characteristics
Behavioral Risk Factor Surveillance System

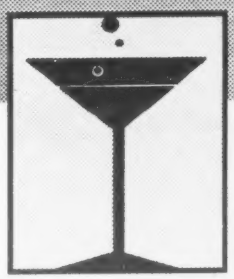
Georgia 1988

Characteristic	Prevalence (%)
Total	25.1
Sex	
Male	29.9
Female	20.8
Race	
White	27.2
Non-white	19.1
Age	
18-34	23.8
35-54	28.4
55 +	20.8
Income	
< 10,000	19.1
10-20,000	30.9
20-35,000	30.2
> 35,000	22.6
Education	
< 8 years	39.3
9-12 years	31.4
12 years	34.0
> 12 years	19.6

The highest percentages of current cigarette smoking occurred among the young (18-34) and middle-aged (35-54) groups, among those with annual household incomes between $10,000 and $35,000 and among those with 12 years or less of formal education, (Table 1). This pattern is consistent with 1986 and 1987 data.

The prevalence of smoking was higher among males than females and among Whites than Non-Whites. The latter represents a departure from 1987 data where smoking prevalence was approximately equal in both ethnic groups (White = 25%; Non-White = 26%) but is consistant with 1986 data (White = 28%; Non-White =23%). Year to year rates may vary due to relatively small numbers, but 1986 and 1988 data suggest that smoking rates are higher in Whites than Non-Whites and that the general trend in smoking prevalence is downward for both ethnic groups.

Alcohol Misuse



In Georgia, men were more likely to engage in heavier chronic drinking, binge drinking, and drinking and driving than women.

ALCOHOL MISUSE

Acute or "Binge" Drinking:

Respondents who reported having five or more drinks on one occasion, one or more times in the past month.

Drinking and Driving:

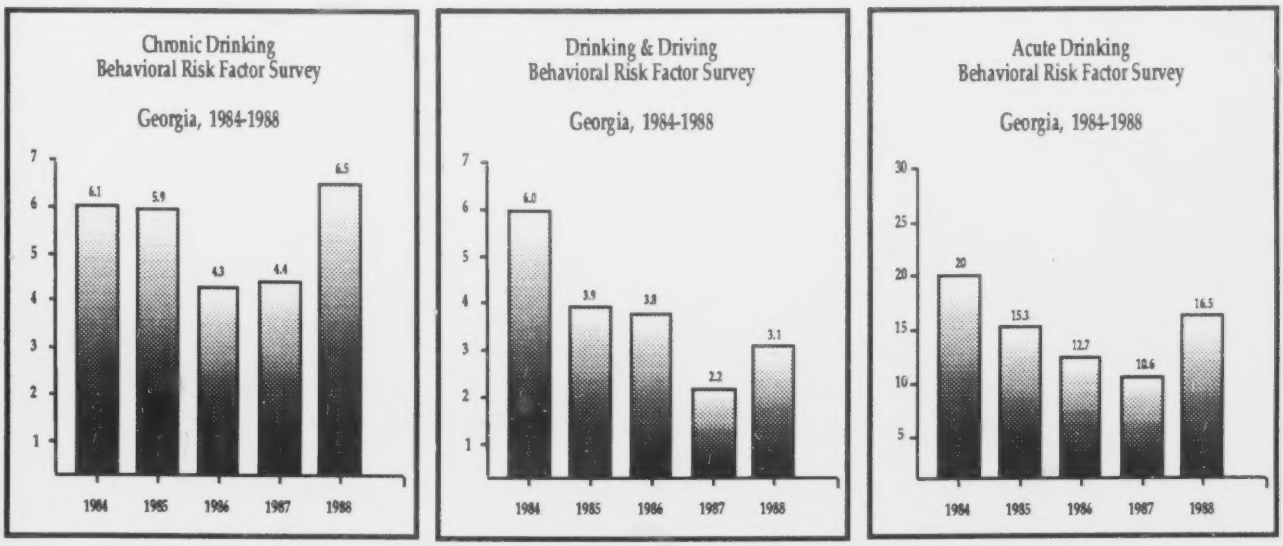
Respondents who reported driving after having too much to drink, one or more times in the past month.

Chronic Drinking:

Respondents who reported an average of 60 or more alcoholic drinks a month.

Associated Risks:
cirrhosis of the liver, injuries, traffic fatalities, HIV infection, cancer

Figure 1



Alcohol misuse is related to cancers of the mouth, esophagus, and liver. Alcohol abuse is also linked to a number of unintentional injuries involving fires, drownings, falls, and traffic mishaps as well as intentional injuries resulting from violent behavior. Recent studies suggest that alcohol abuse lowers the effectiveness of the immune system, thereby increasing the risk of Human Immunodeficiency Virus (HIV) infection.[1] In 1988, 7% of Georgians engaged in chronic heavy drinking, 17% in acute or "binge" drinking, and 3% reported driving after having too much to drink. The prevalence of chronic drinking, acute alcohol use, and drinking and driving behaviors all tended to increase in 1988 when compared to 1987 (Figure 1).

continued

Compared to women, men reported higher prevalence rates for all three alcohol risk factors--chronic drinking (12% vs 1%), acute drinking (26% vs 8%), and drinking and driving (5% vs 1%). Whites were at least twice as likely to engage in acute or "binge" drinking, chronic drinking, and drinking and driving as were Non-Whites. Acute drinking and drinking and driving occurred more frequently among those respondents who were in the 18-34 year age group and among those who had greater than a twelfth grade education. Chronic drinking also increased with increasing income and education (Table 1).

Table 1

Prevalence of Alcohol Misuse
by Selected Characteristics
Behavioral Risk Factor Surveillance System

Georgia 1988

Characteristic	Chronic Drinking	Acute Drinking	Drinking & Driving
Total	6.5	16.5	3.1
Sex			
Male	12.3	26.4	5.1
Female	1.4	7.7	1.3
Race			
White	7.5	19.3	3.9
Non-white	3.8	8.8	.9
Age			
18-34	7.5	23.9	5.7
35-54	7.8	14.9	1.3
55 +	1.2	2.5	1.0
Income			
< 10,000	4.5	12.7	3.7
10-20,000	4.0	14.3	1.6
20-35,000	4.3	17.1	3.0
> 35,000	9.4	19.5	4.1
Education			
< 8 years	1.7	10.0	-
9-12 years	1.9	9.5	.9
12 years	6.0	15.7	3.3
> 12 years	7.7	19.2	3.6

References

1. Risk Factors Affecting the Health Status of Georgia. Division of Public Health; Georgia Department of Human Resources, 1987.

Preventive Health Practices

HIV is almost always transmittable through certain readily identifiable and mostly voluntary behaviors. Seventeen percent of the Georgia population has had their blood tested for AIDS. At the same time seven percent know nothing about AIDS.

Respondents who reported that compared to most people they knew a lot, some, a little or nothing about AIDS.

AIDS: A viral disease manifested by chronic lymphadenopathy, immune dysfunction, skin and mucous membrane immune defects, systemic immune deficiency, and opportunistic disease.

Associated Risks:
sexually transmitted diseases, homosexual activity, IV drug abuse

Table 1

How much would you say you know about AIDS

Georgia 1988

Characteristic	A lot	Some	A little	None
Total	37.9	38.6	16.9	5.8
Sex				
Male	38.2	38.4	17.3	5.0
Female	37.7	38.8	16.6	6.4
Race				
White	40.5	41.4	14.6	2.8
Non-white	34.2	40.5	14.6	6.3
Age				
18-34	42.3	43.5	13.0	.8
35-54	41.6	40.6	14.0	2.3
55 +	32.9	27.7	23.4	14.6

Because the behaviors that transmit HIV infection are recognizable, it is possible to prevent its spread. Information and education programs are needed.

In Georgia, males and females were similar in the extent of their knowledge about AIDS. White respondents were somewhat more likely to know "a lot" about AIDS than were Non-Whites (41% vs. 34%); whereas Non-Whites were more likely to know "nothing" than Whites (6% vs. 3%). In general, persons 55 years and over were less knowledgeable about AIDS than were those 18-54 years (Table 1).

Respondents who reported yes or no when asked whether they have had their blood tested for the AIDS Virus.

Table 2

Have you had your blood tested for the AIDS Virus

Georgia 1988

Characteristic	Yes	No
Total	16.8	80.2
Sex		
Male	20.3	76.1
Female	13.7	83.9
Race		
White	15.6	81.1
Non-white	20.9	77.4
Age		
18-34	21.1	76.7
35-54	13.6	82.6
55 +	9.5	85.4

Exposure to the human immunodeficiency virus (HIV) can be evaluated for evidence of infection by testing for the presence of antibodies to HIV in the blood. HIV infection usually causes no symptoms at first and can take from six weeks to a year before the virus is detected by the standard (antibody) HIV test.

In Georgia, male respondents were tested more frequently for HIV antibodies than were females (20% vs. 14%); Non-Whites were more likely to have been tested than were Whites (21% vs. 16%). Frequency of testing was greater in the age group 18-34 years than in either the 35-54 or 55+ age groups. (21% vs. 14% vs. 10%), (Table 2).

Composite Prevalence Rates By State

COMPOSITE PREVALENCE SCORES - 1988

In addition to ranking the 37 BRFS participating states on each of the nine individual risk factors, a single overall measure of unhealthful behavior was calculated for each state. This measure, called a composite weighted z-score, is based on models developed by the National Center for Health Statistics and described in "The NWNL State Health Rankings" published by Northwestern National Life Insurance Company. The composite weighted z-score is calculated by combining scores derived from prevalences for seven designated risk factors, or components: (1) seatbelt non-use; (2) current hypertension; (3) obesity; (4) sedentary lifestyle; (5) current smoking; (6) smokeless tobacco use and (7) alcohol misuse (a single component calculated from prevalences for heavier drinking, binge drinking and drinking and driving) for each state.

A z-score for each of the seven risk factor components was obtained for each BRFS participating state by calculating the number of standard deviations its prevalence fell above or below the mean prevalence for a given risk factor. A weighted z-score, or the product of the z-score and the coefficient of variation (the standard deviation divided by the mean), was then calculated for each component. The sum of the weighted z-scores for all seven components gave each state it's final composite score. The table lists the 37 states from highest (most unhealthy behaviors) to lowest (fewest unhealthy behaviors) score. West Virginia had by far the highest composite score of the 37 BRFS states in 1988 while Utah had the lowest score. Georgia scored in the mid-range.

One weakness inherent in this type of analysis is the assumption of equal weighting for each risk factor or component. It is acknowledged that some behaviors might be more harmful to an individual's health than others. For the purposes of this report, however, it was decided that equal weighting was a valid procedure in demonstrating the variance of risk-taking behaviors from state to state. Future studies will explore alternative weighting methods.

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COMPOSITE PREVALENCE SCORE RANKINGS
1988 BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

STATE	COMPOSITE WEIGHTED Z-SCORE	RANK
West Virginia	2.81	1
Kentucky	1.73	2
South Dakota	1.72	3
Alabama	1.45	4
North Dakota	1.17	5
Montana	1.15	6
Nebraska	1.08	7
South Carolina	0.81	8
Wisconsin	0.62	9
Tennessee	0.57	10
Indiana	0.50	11
Oklahoma	0.47	12
Michigan	0.42	13
New Hampshire	0.32	14
Ohio	0.11	15
Minnesota	0.11	16
North Carolina	0.06	17
Maine	0.03	18
Massachusetts	-0.19	19
Georgia	**-0.19**	**20**
Missouri	-0.20	21
Illinois	-0.26	22
Arizona	-0.27	23
Idaho	-0.30	24
Texas	-0.34	25
Florida	-0.51	26
New Mexico	-0.68	27
Iowa	-0.71	28
Connecticut	-0.78	29
Rhode Island	-0.79	30
Washington	-0.91	31
New York	-1.12	32
California	-1.21	33
District of Columbia	-1.47	34
Hawaii	-1.69	35
Maryland	-1.73	36
Utah	-1.79	37

1988 District Risk Factor Prevalence Rates

IMPORTANT NOTE:

1988 was the first year that county of residence information was collected by the Behavioral Risk Factor Surveillance System. This allowed data to be aggregated by health district. These data should not be used in and by themselves to make judgements as to how a particular district compares to the state. Such comparisons must await the accumulation of several years worth of data to provide sufficient numbers to indicate trends.

For three districts, no tables are available because there were too few observations to allow for statistical analysis.

Behavioral Risk Factor Survey
District (1-1) Rome
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	39	25	25
Seat Belt Non-Use	43	34	42
*Hypertension	42	15	N/A
Smokeless Tobacco	3	3	N/A
Acute Drinking	10	17	15
Chronic Drinking	1	7	6
Drinking/Driving	3	3	3
**Obesity (Overweight)	11	19	21
Sedentary Lifestyle	69	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (1-2) Dalton
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	54	25	25
Seat Belt Non-Use	50	34	42
*Hypertension	9	15	N/A
Smokeless Tobacco	5	3	N/A
Acute Drinking	28	17	15
Chronic Drinking	2	7	6
Drinking/Driving	2	3	3
**Obesity (Overweight)	23	19	21
Sedentary Lifestyle	87	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (2-0) Gainesville
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	40	25	25
Seat Belt Non-Use	55	34	42
*Hypertension	23	15	N/A
Smokeless Tobacco	5	3	N/A
Acute Drinking	17	17	15
Chronic Drinking	6	7	6
Drinking/Driving	2	3	3
**Obesity (Overweight)	24	19	21
Sedentary Lifestyle	76	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (3-1) Cobb
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	30	25	25
Seat Belt Non-Use	32	34	42
*Hypertension	12	15	N/A
Smokeless Tobacco	4	3	N/A
Acute Drinking	23	17	15
Chronic Drinking	12	7	6
Drinking/Driving	7	3	3
**Obesity (Overweight)	14	19	21
Sedentary Lifestyle	54	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (3-2) Fulton
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	19	25	25
Seat Belt Non-Use	24	34	42
*Hypertension	14	15	N/A
Smokeless Tobacco	.6	3	N/A
Acute Drinking	16	17	15
Chronic Drinking	7	7	6
Drinking/Driving	5	3	3
**Obesity (Overweight)	13	19	21
Sedentary Lifestyle	45	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (3-4) Gwinnett
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	28	25	25
Seat Belt Non-Use	31	34	42
*Hypertension	9	15	N/A
Smokeless Tobacco	.3	3	N/A
Acute Drinking	20	17	15
Chronic Drinking	6	7	6
Drinking/Driving	3	3	3
**Obesity (Overweight)	16	19	21
Sedentary Lifestyle	68	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (3-5) Dekalb
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	23	25	25
Seat Belt Non-Use	32	34	42
*Hypertension	10	15	N/A
Smokeless Tobacco	5	3	N/A
Acute Drinking	19	17	15
Chronic Drinking	8	7	6
Drinking/Driving	2	3	3
**Obesity (Overweight)	19	19	21
Sedentary Lifestyle	61	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (4-0) LaGrange
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	20	25	25
Seat Belt Non-Use	25	34	42
*Hypertension	19	15	N/A
Smokeless Tobacco	3	3	N/A
Acute Drinking	11	17	15
Chronic Drinking	5	7	6
Drinking/Driving	1	3	3
**Obesity (Overweight)	20	19	21
Sedentary Lifestyle	64	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (5-1) Dublin
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	8	25	25
Seat Belt Non-Use	47	34	42
*Hypertension	15	15	N/A
Smokeless Tobacco	25	3	N/A
Acute Drinking	4	17	15
Chronic Drinking	0	7	6
Drinking/Driving	0	3	3
**Obesity (Overweight)	21	19	21
Sedentary Lifestyle	48	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (5-2) Macon
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	21	25	25
Seat Belt Non-Use	22	34	42
*Hypertension	57	15	N/A
Smokeless Tobacco	0	3	N/A
Acute Drinking	26	17	15
Chronic Drinking	15	7	6
Drinking/Driving	0	3	3
**Obesity (Overweight)	15	19	21
Sedentary Lifestyle	100	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (7-0) Columbus
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	25	25	25
Seat Belt Non-Use	26	34	42
*Hypertension	17	15	N/A
Smokeless Tobacco	3	3	N/A
Acute Drinking	11	17	15
Chronic Drinking	2	7	6
Drinking/Driving	2	3	3
**Obesity (Overweight)	28	19	21
Sedentary Lifestyle	65	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (8-2) Albany
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	50	25	25
Seat Belt Non-Use	40	34	42
*Hypertension	0	15	N/A
Smokeless Tobacco	0	3	N/A
Acute Drinking	0	17	15
Chronic Drinking	0	7	6
Drinking/Driving	0	3	3
**Obesity (Overweight)	50	19	21
Sedentary Lifestyle	74	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (9-1) Savannah
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	33	25	25
Seat Belt Non-Use	52	34	42
*Hypertension	22	15	N/A
Smokeless Tobacco	3	3	N/A
Acute Drinking	4	17	15
Chronic Drinking	3	7	6
Drinking/Driving	3	3	3
**Obesity (Overweight)	37	19	21
Sedentary Lifestyle	66	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (9-2) Waycross
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	9	25	25
Seat Belt Non-Use	31	34	42
*Hypertension	31	15	N/A
Smokeless Tobacco	0	3	N/A
Acute Drinking	9	17	15
Chronic Drinking	0	7	6
Drinking/Driving	0	3	3
**Obesity (Overweight)	31	19	21
Sedentary Lifestyle	31	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (9-3) Brunswick
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	20	25	25
Seat Belt Non-Use	50	34	42
*Hypertension	9	15	N/A
Smokeless Tobacco	0	3	N/A
Acute Drinking	4	17	15
Chronic Drinking	5	7	6
Drinking/Driving	0	3	3
**Obesity (Overweight)	39	19	21
Sedentary Lifestyle	79	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey
District (10) Athens
Georgia 1988

Risk Factors	District Rate (%)	State Rate (%)	National (1987) Median Prevalence
Smoking	9	25	25
Seat Belt Non-Use	38	34	42
*Hypertension	12	15	N/A
Smokeless Tobacco	3	3	N/A
Acute Drinking	20	17	15
Chronic Drinking	9	7	6
Drinking/Driving	4	3	3
**Obesity (Overweight)	15	19	21
Sedentary Lifestyle	54	62	59

*Respondents who had been told more than once that their blood pressure was high, were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a medium frame person) based upon the 1959 Metropolitan Life Insurance Tables of weight for height. Calculations for Ideal Body Weight were based on self-reported weight and height.

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Risk Factors Affecting the Health Status of Georgians

A Summary of the 1989 Behavioral Risk Factor Survey

Division of Public Health
Georgia Department of Human Resources

May 1991

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Executive Sumary

Many of the leading causes of death in Georgia could be substantially reduced if persons modified risk behaviors related to: smoking, diet, exercise, seatbelt use, and alcohol consumption. Until recently, a lack of information concerning the prevalence of risk-taking behaviors among Georgians has hindered health professionals in their efforts to prevent unnecessary illness and death in the community. To resolve this problem, the Office of Epidemiology, in cooperation with the Centers for Disease Control (CDC), has conducted random telephone interviews to assess the personal health practices of Georgians. Known as the Behavioral Risk Factor Surveillence System (BRFSS) and operated by 39 other states, this system provides the opportunity to compare risk factor prevalence among states and the ability to monitor trends in risk behaviors over time. Summary results from the 1989 BRFSS are as follows:

Smoking

Smoking has been linked to coronary heart disease, lung and other cancers, chronic obstructive pulmonary disease, and stroke. Smoking while pregnant increases the risk for low birthweight and infant mortality. Despite these risks, 23% of Georgia's adult population were current smokers. More men (28%) were current smokers than women (19%) and a higher percentage of women than men attempted to quit smoking.

Current Hypertension

Current hypertension is a major risk factor for heart disease and stroke. In 1989 17% of Georgia's adult population indicated being at risk for current hypertension. Non-whites (blacks and Hispanics) reported higher rates for high blood pressure than whites (22% vs. 16%) and more females reported blood pressure problems than males (21% vs. 14%).

Obesity

Overweight persons are at higher risk for developing coronary heart disease, hypertension, and diabetes than persons of average weight. In Georgia, approximately 23% of the adult population reported being overweight. Non-white respondents (blacks and Hispanics) reported higher rates for obesity than did white respondents (28% vs. 22%) however, males and females reported weight problems almost equally.

Sedentary Lifestyle

Regular physical exercise reduces the risk of cardiovascular disease, diabetes, and stress. However, 64% of Georgians failed to exercise on a regular basis and reported leading sedentary lifestyles. Of those who exercised, 39% reported walking as their preferred physical activity.

Seatbelt Non-use

The use of car seatbelts can prevent a significant number of automobile-associated fatalities. Survey results indicated that 25% of Georgians failed to use seatbelts on a regular basis. Higher rates of non-use occurred among men, younger adults, and respondents in middle income and education groups.

Alcohol Misuse

Alcohol misuse is related to cirrhosis of liver as well as cancers of the mouth, esophagus, and liver. Drinking is also linked to a number of unintentional injuries involving fires, drownings, falls, and motor vehicle collisions, as well as, intentional injuries resulting from violent behavior. In 1989, 2% of Georgians engaged in chronic heavy drinking, 10% in acute or "binge" drinking, and 2% reported drinking and driving.

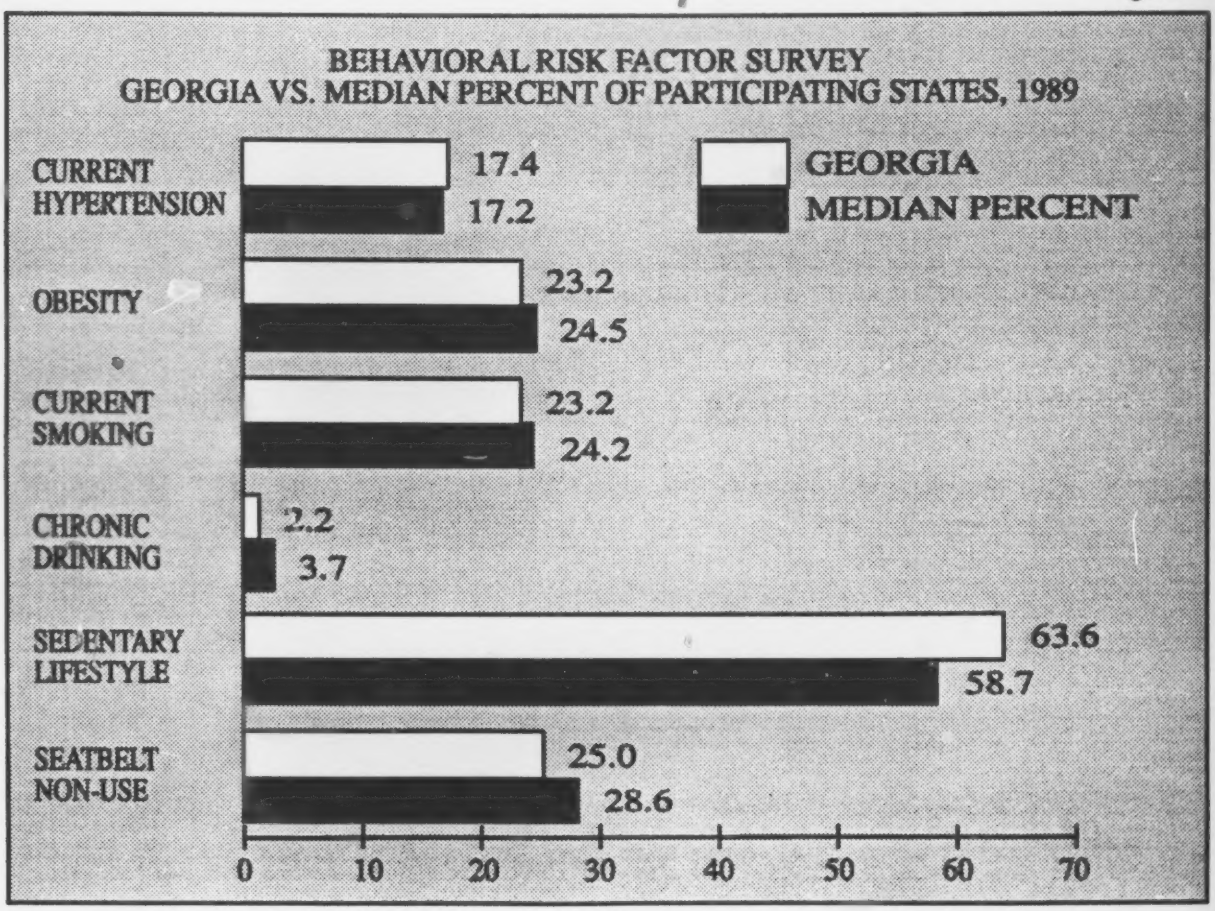
Preventive Health Practices

In 1989, 69% of Georgia's adult population underwent a routine medical checkup. Approximately one half of the respondents surveyed had submitted to blood cholesterol testing and 15% had been told by doctors to reduce their cholesterol levels. Of the women surveyed, 42% had had at least one mammogram, and 67% of these were in the last year.

Comparison of Georgia to Other States

Based on the median percents of participating states (Figure 1), Georgians ranked equal to or less than most other states for all risk factors except sedentary lifestyle.

Figure 1



Introduction

In 1989, Georgia along with thirty-nine other participating states conducted random-digit dialed telephone surveys as part of the Behavioral Risk Factor Surveillance System (BRFSS). Co-sponsored by the Centers for Disease Control and the Division of Public Health's Office of Epidemiology, these surveys assess the prevalence of a variety of personal health practices and behaviors among the adult population (ages 18+). The surveys began in Georgia in 1984. Detailed analyses of 1984-1986, 1987 and 1988 data have been published previously.

Health professionals using BRFSS data can target adults who are most at risk for poor health outcomes and develop intervention and prevention programs accordingly. BRFSS data may also be used as a planning tool to set state health objectives, to document the need for programmatic funding, and to monitor the progress of state health efforts.

This report analyzes the results of the 1989 BRFSS survey for the following variables: smoking, hypertension, obesity, alcohol use, sedentary lifestyle, seatbelt non-use and preventive health practices. Where data permit, results are presented by age, race, sex, and socio-economic status. Each risk factor is organized by section which includes a brief discussion of associated health risks. Appropriate intervention and motivational strategies for reducing behavioral risks are also included in the report.

Numbers appearing in the text have been rounded to the nearest whole integer. Overall prevalence estimates of risk behaviors among Georgians by year are presented with graphics.

Methodology

Telephone surveys have been established as a reliable and affordable method for determining the prevalence of behavioral risk factors in a population.

Beginning in 1981, the Centers for Disease Control (CDC) and various state health departments, including Georgia, began to develop a system for estimating the prevalence of behavioral risk factors in the population using random digit-dialed telephone surveys. The goal of this system was to provide behavioral risk factor data which could be used to plan, implement, monitor, and assist in the evaluation of health programs. In 1984, Georgia applied for and received a federal grant to initiate a state-based system for self-reported behaviors of personal health practices. Georgia has continued to participate in this telephone interview system since 1984

Interviews for the selected behaviors are conducted during one week each month, thus providing annual estimates that are seasonally adjusted.

SAMPLING: Telephone numbers are randomly generated by CDC using the first 8 digits of the 10 digit telephone number. A "cluster" of 100 telephone numbers is produced on a random basis using the last two digits of the 10 digit number. These numbers are then provided to the Georgia Behavioral Risk Factor Surveillance System for initiation into the screening sample. The clusters are screened by calling one randomly selected number. If this number is a residence, the entire cluster of 100 numbers is accepted for use. If the number is a non-working number, or is a business phone, the entire cluster is rejected. The goal is to complete three interviews from each "cluster" of 100 numbers. The interviewee is chosen through a selection process that considers all persons residing in the household who are 18 years of age or older.[1]

INTERVIEWS: Surveys consist of approximately 70 questions regarding personal behaviors related to seatbelt usage, smoking, alcohol usage, bodyweight, exercise, hypertension, preventive health practices, and demographic data. Interviews are conducted primarily during week nights, but some interviews are completed during daytime hours and on Saturdays and Sundays. Four outcomes are possible when a phone number is dialed: 1) a completed interview, 2) a refusal to be interviewed, 3) a busy line, 4) or a non-working number or no answer after several rings.

The Computer-Assisted Telephone Interview (CATI) system allows all responses to be keyed directly into the computer for later editing. Responses are then transferred to CDC by floppy disk where data are tabulated and weighed to provide representative population-based estimates of risk factor prevalence.

Questionnaires used by the states participating in the CATI system are a composite of questions agreed upon by representatives of all participating states. Each state may add additional state-based questions if desired. During 1989, the Georgia BRFSS completed 1,602 interviews for an average of 134 completed interviews per month.

Note: References located in appendix by section

SMOKING

In 1989, Georgia reached the 1990 National Health Objective of a smoking prevalence of < 25%

Smoking

Current Smoker: A respondent who ever smoked 100 cigarettes in his/her lifetime and was still smoking.

Former Smoker: A respondent who was not currently smoking, but who reported having smoked > 100 cigarettes during his or her lifetime.

Quit Ratio: The ratio of former smokers to persons who "ever" smoked 100 cigarettes in his or her lifetime. (The proportion of former smokers among former and current smokers.)

Attempter: A current smoker who stopped smoking for a week or more during the past year.

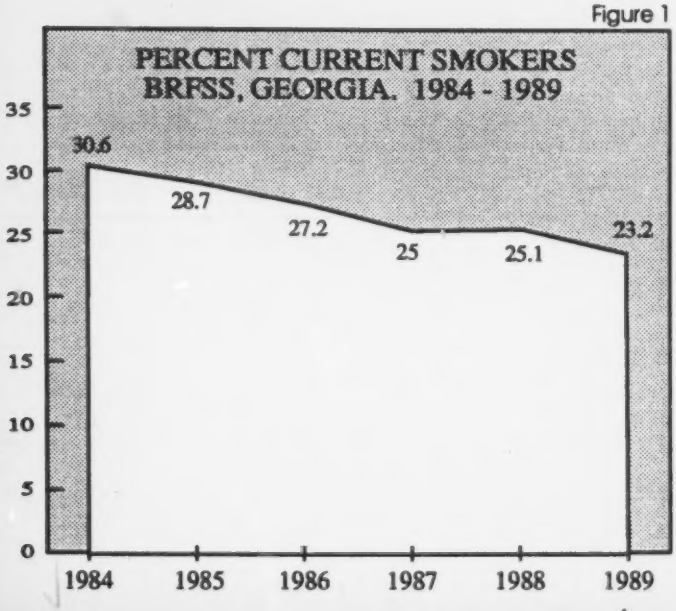
Associated Risks: lung cancer, heart disease, stroke, low birthweight, increased infant mortality, increased morbidity from respiratory infections

---

Smoking has been linked to coronary heart diseases, lung and other cancers, chronic obstructive pulmonary disease, and stroke. Smoking during pregnancy has also been shown to increase the risk for low birthweight and increased infant mortality[1]. Despite the health consequences associated with cigarette smoking, 23% of Georgia's adult population identified themselves as current smokers in 1989. This was lower than the 1988 smoking prevalence of 25%. The Nation's 1990 Objective of a smoking rate of less than 25% was achieved by Georgia in 1989 (Figure 1).

Overall, in 1989 current smokers were more likely to be white than non-white (25% vs. 19%) (Table 1). As in previous years, there was a higher prevalence of cigarette smoking among men than women (28% vs. 19%).

Figure 1



Prevalence of Current Cigarette Smoking by Selected Characteristics Behavioral Risk Factor Surveillance System

Georgia 1989

Characteristic	Prevalence (%)
Total	**23**
Sex	
Male	28
Female	19
Race	
White	25
Non-white	19
Age	
18-34	25
35-54	26
55 +	17
Income	
< 10,000	20
10-20,000	27
20-35,000	32
> 35,000	17
Education	
< 9th grade	15
Some High School	32
High School Graduate	28
Beyond High School	18

The highest percentages of current cigarette smoking occurred among the young (18-34) and middle-aged (35-54) groups, among those with reported household incomes from $10,000 to $35,000 (Figure 2), and among those who had completed part or all of high school (Figure 3).

Approximately 22% of the respondents surveyed stated that they were former smokers. In 1987, 42% of adults who ever smoked cigarettes had quit. This proportion (quit ratio) had increased slightly to 47% in 1989. This increase was equal in the percentage of men and women who successfully quit smoking (47%). Overall, 39% of current smokers in Georgia attempted smoking cessation in 1989.

Motivation and Intervention

The World Health Organization, the American Psychiatric Association and the scientific community in general have recognized chronic tobacco use as a drug addiction. Treatment of tobacco users should include sensitivity to the addictive effect that nicotine has on the body. Nicotine replacement therapy (e.g., nicotine gum) as an adjunct to behavioral interventions (aversive smoking, skills training, group support, and self reward) can reduce withdrawal symptoms and may promote efficacy of behavioral treatment.[2]

Since smoking begins primarily during childhood and adolescence, the Surgeon General has advocated the following activities for educating youth and restricting accessibility of tobacco:

Prevention of tobacco use in addition to prevention of illicit drug use should be included in comprehensive school health curriculum

Question the practice of tobacco sales through vending machines and distribution of free samples through the mail

Conduct public information campaigns to increase community awareness about the addictive nature of tobacco use

Other populations considered to be at high risk for cigarette smoking, which, therefore, should be given special attention include: women (particularly pregnant women), minorities (particularly black males), and blue collar workers. Some strategies for combating the prevalence of cigarette smoking are: smoking cessation programs, employee incentive programs, and policies banning or restricting smoking in the workplace.

Figure 2

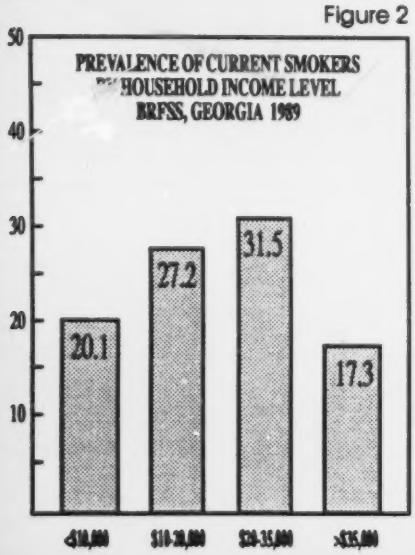


Figure 3

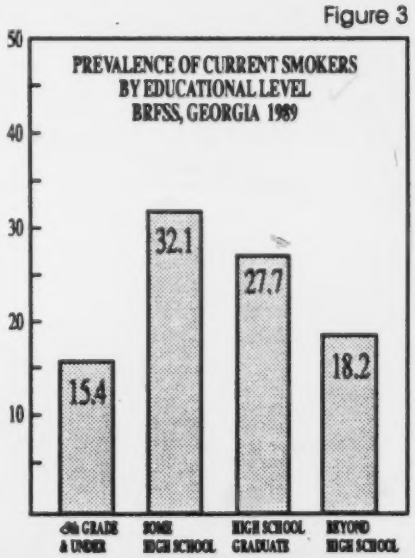
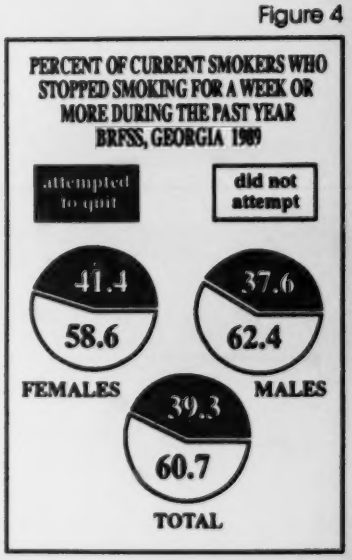
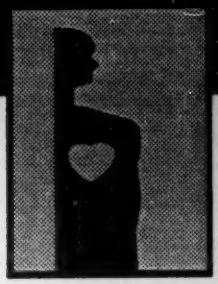


Figure 4





Persons with lower income and educational achievement were more likely to report having high blood pressure than those with higher income and education.

NOTE:

1988 Data may have been influenced by oversampling urban areas.

Current Hypertension

Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

Associated Risks:
heart attack, stroke, kidney disease

Hypertension is a chronic condition that is a major risk factor for heart disease and stroke. In 1989, 17% of Georgia's adult population knew they were at risk for current hypertension compared to 15% in 1988 (Figure 1, Table 1). Non-whites (blacks and Hispanics) reported a higher prevalence for current hypertension than whites (22% vs. 16%) (Figure 2); and more females revealed blood pressure problems than males (21% vs. 14%).

Table 1

Prevalence of Current Hypertension
by Selected Characteristics
Behavioral Risk Factor Surveillance System

Georgia 1989

Characteristic	Prevalence (%)
Total	17
Sex	
Male	14
Female	21
Race	
White	16
Non-white	22
Age	
18-34	4
35-54	15
55 +	41
Income	
< 10,000	33
10-20,000	19
20-35,000	13
> 35,000	12
Education	
< 9th grade	36
Some High School	30
High School Graduate	16
Beyond High School	11

Figure 1

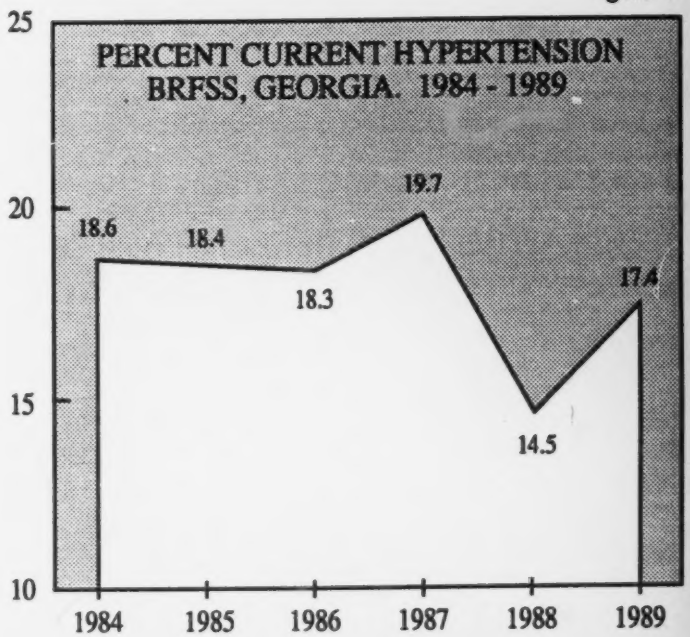
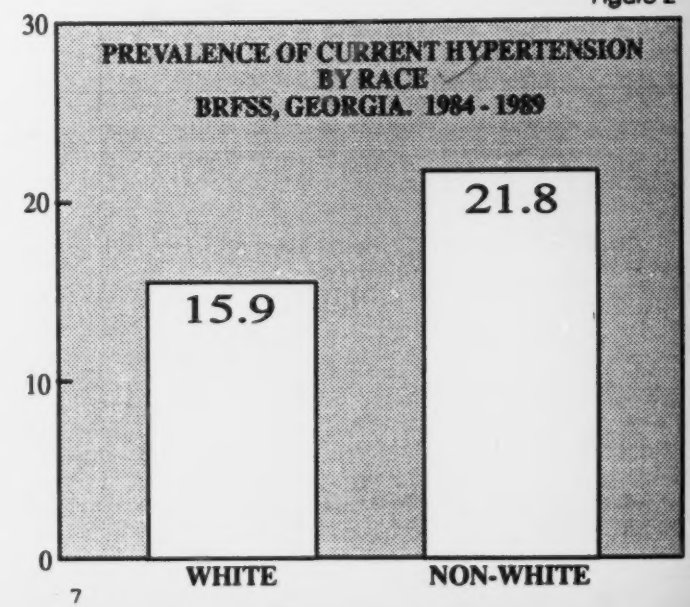


Figure 2

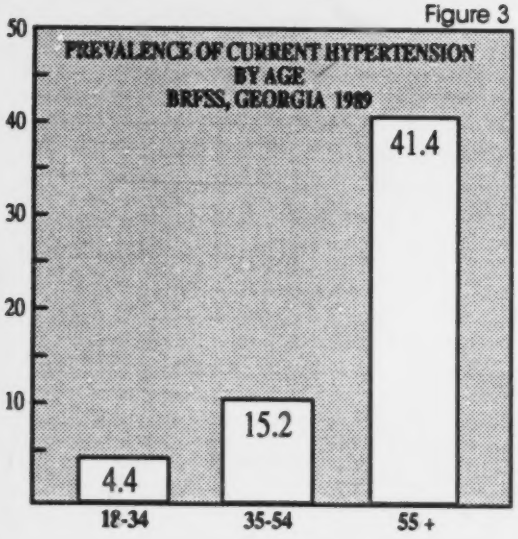


As expected, the prevalence of hypertension increased with age. High blood pressure was reported by only 4% of the young adult respondents, whereas middle and older adults reported prevalences of 15% and 41% respectively (Figure 3). An inverse relationship was observed between current hypertension and socio-economic status. Respondents categorized in the higher income and educational brackets were less likely to experience current hypertension, whereas hypertension was more prevalent in those with less income and lower educational status (Figures 4 and 5).

Treatment and Intervention

Adults aged 18 and older with reported blood pressure readings of ≥ 140 systolic or ≥ 90 diastolic are considered hypertensive[1]. Once hypertension is diagnosed, anti-hypertensive drugs may be prescribed as treatment. In Georgia, 67% of the hypertensives surveyed indicated that they had medication prescribed for high blood pressure and 90% were compliant with their prescribed medication regimen.

Figure 3



Non-pharmacologic or non-drug approaches used alone or in combination with drug therapy may be appropriate for some patients. These interventions rely on lifestyle changes and include:

weight reduction
alcohol restriction
(no more than two drinks per day)
sodium restriction
tobacco avoidance
excercise

Although salt restriction is generally recommended for hypertensive patients, current studies suggest that it would be prudent for most Americans to reduce sodium intake.[2]

Figure 4

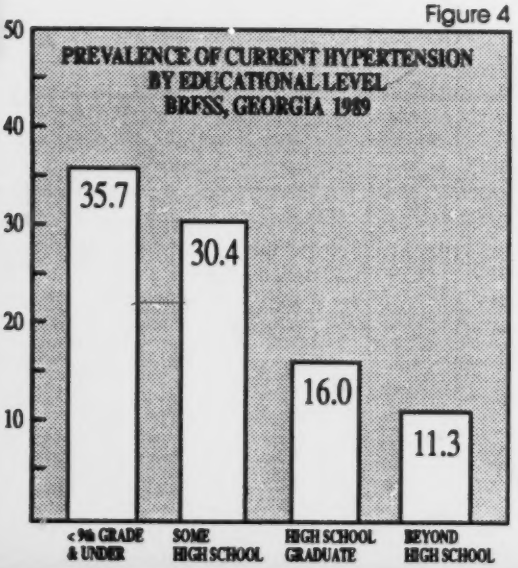
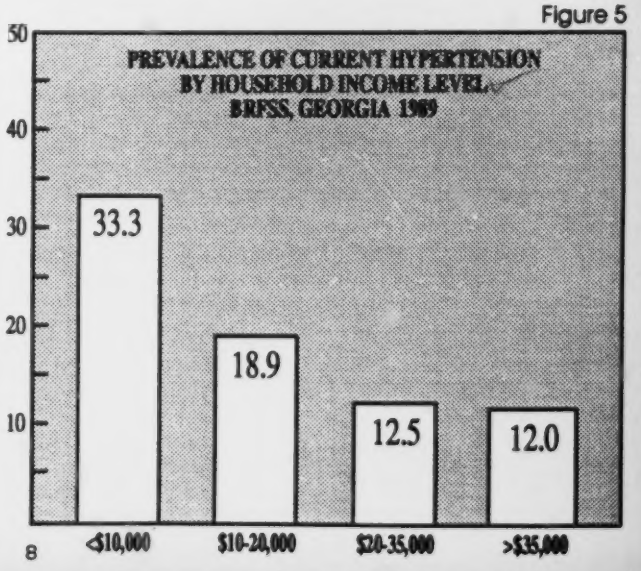
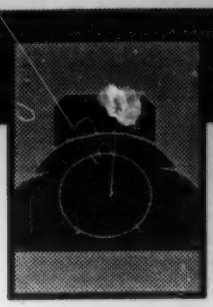


Figure 5





Although obesity based on reported weight for height was almost equally common among men and women in Georgia, more women than men attempted to lose weight.

Obesity

Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid value of a median frame person) based upon the 1959 Metropolitan Life Insurance Tables of Weight for Height . Calculations for Ideal Body Weight were based on self-reported weight and height.

Associated Risks:
hypertension, cardiovascular disease, diabetes mellitus, cancer, degenerative joint disease

Obesity is strongly associated with hypertension, hypercholesterolemia (elevated blood cholesterol), and non-insulin dependent diabetes[1]. Research studies have also linked obesity to several other chronic diseases and conditions, including coronary heart disease, cancer, and degenerative joint disease[2].

By self-report, 23% of those participating in the 1989 BRFSS were overweight, compared to 19% in 1988 (Figure 1). Obesity was almost equally distributed between men and women (23% vs. 24%) (Figure 2), but more prevalent among non-whites than whites (28% vs. 22%). Young adults were least likely to experience a weight problem; however, as age increased, so did the percentage of obese respondents.

Figure 1

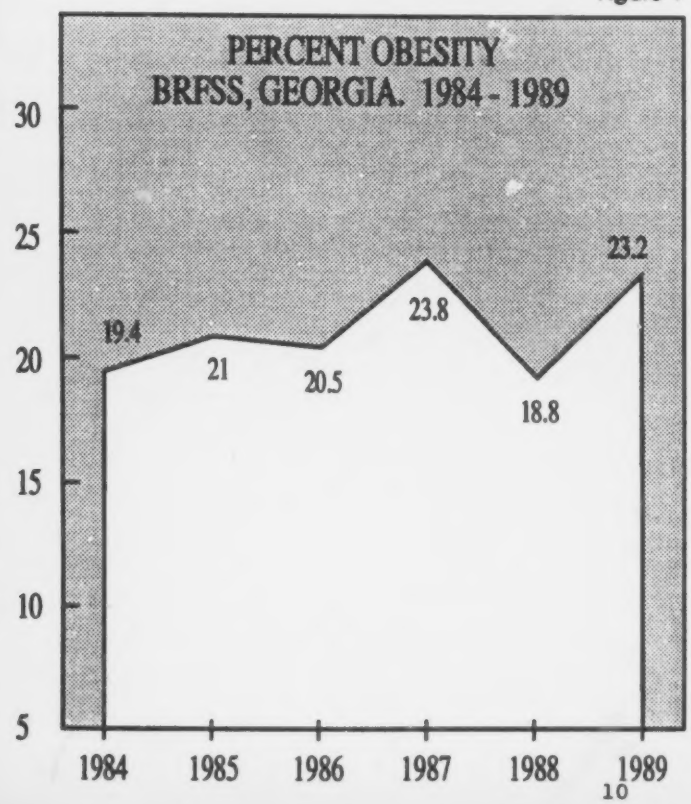


Table 1

Prevalence of Obesity by Selected Characteristics Behavioral Risk Factor Surveillance System

Georgia 1989

Characteristic	Prevalence (%)
Total	23
Sex	
Male	23
Female	24
Race	
White	22
Non-white	28
Age	
18-34	19
35-54	24
55 +	30
Income	
< 10,000	32
10-20,000	27
20-35,000	24
> 35,000	17
Education	
< 9 th grade	32
Some High School	32
High School Graduate	23
Beyond High School	19

Obesity was inversely associated with both education and annual income (Table 1). The percent of overweight persons was highest among those who earned <$10,000 annually, and, as income increased, the percent of obesity declined. Similarly, the prevalence of obesity was highest among respondents who had not graduated from high school; whereas, those who completed high school or education beyond high school reported lower percentages for obesity (Figure 4).

Twenty-six percent of the respondents surveyed in 1989 were attempting to lose weight. More women than men (33% vs. 19%) were involved in controlling their weight (Figure 5). Of those trying to lose weight, 60% restricted their caloric intake, and 54% increased their level of physical activity.

Figure 2

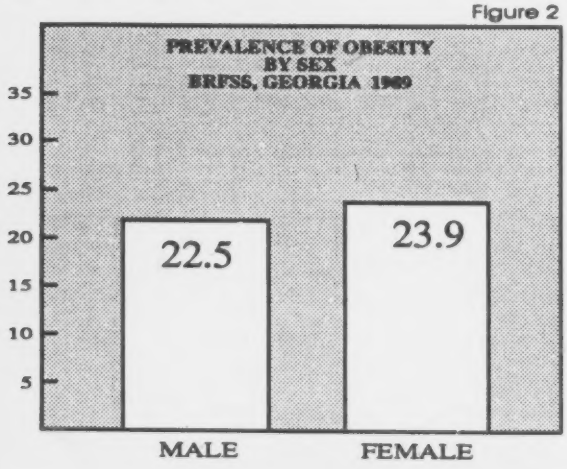


Figure 3

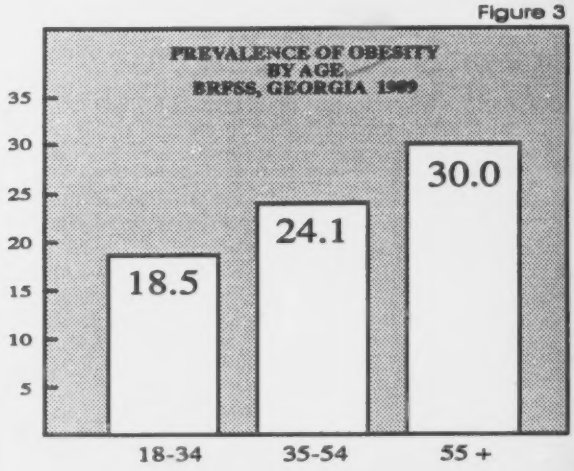


Figure 4

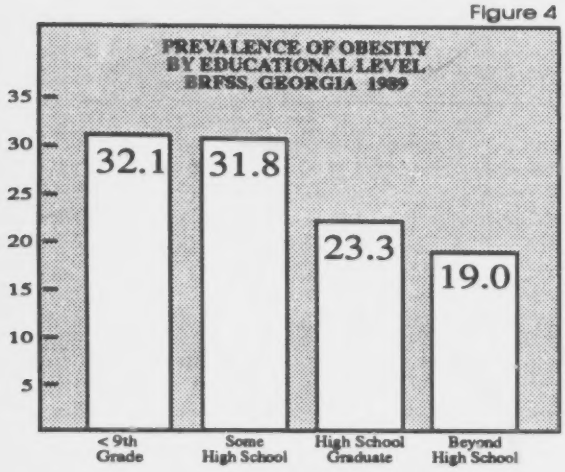
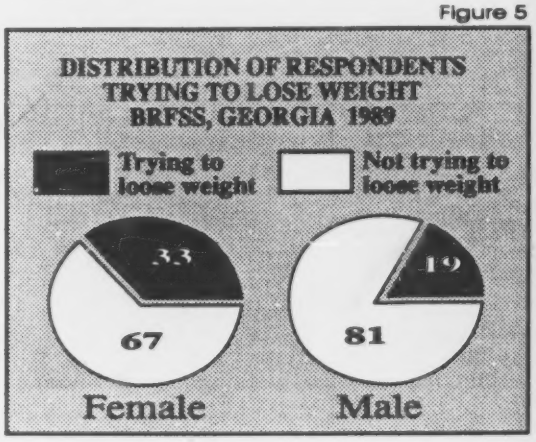


Figure 5



Prevention and Intervention

Obesity is very difficult to treat because both genetic predisposition and environment play important roles[3]. Dietary restriction, behavior modification, and exercise in combination have been more successful than any of these interventions alone[4]. Children who have obese parents are at higher risk for becoming obese themselves. For this target group, daily exercise and sensible diet beginning in childhood are the most important preventive measures against obesity.

Sedentary Lifestyle

Only eight percent of Georgians engaged in the recommended minimal levels of physical activity which benefit health.

Sedentary Lifestyle

Respondents who reported either no physical activity or physical activity less than three times per week and/or less than 20 minutes per occasion. (This criterion level represented the minimum amount of exercise needed to reap health benefits and was based on the 1990 Health Objectives for the Nation).

Associated Risks:
cardiovascular disease, diabetes, anxiety, depression

Physical activity is associated with reduced risk of coronary heart disease, non-insulin dependent diabetes mellitus, hypertension, and osteoporosis[1]. Regular physical activity can also enhance weight control and reduce symptoms of anxiety and depression[2,3]. In spite of the known health benefits derived from routine physical activity, many Georgians fail to exercise.

In 1989, 64% of Georgians surveyed by the BRFSS led a sedentary or inactive lifestyle, a slightly higher percentage than reported for the adults polled in 1988 (62%) (Figure 1). While 28% of the respondents in 1989 engaged in regular physical activity, only 8% exercised enough to meet the 1990 Objectives for the Nation's criterion level necessary for cardiovascular fitness (Figure 3).

Figure 1

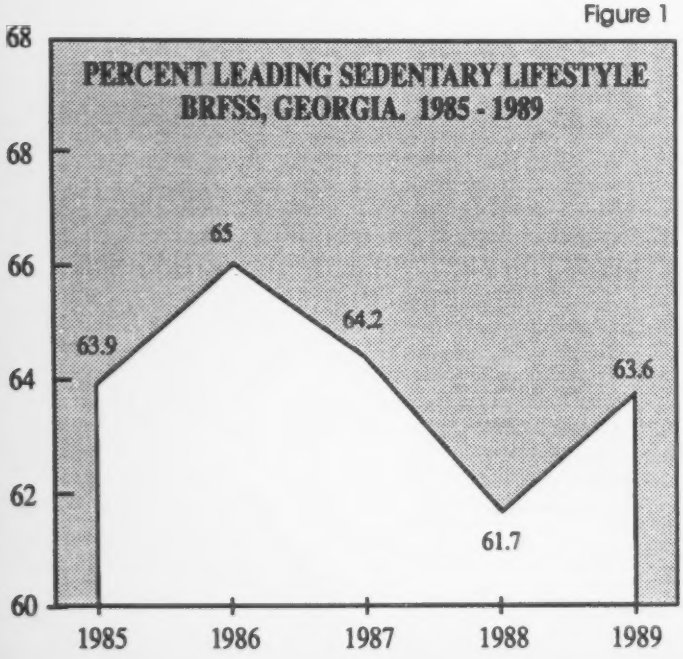


Figure 2

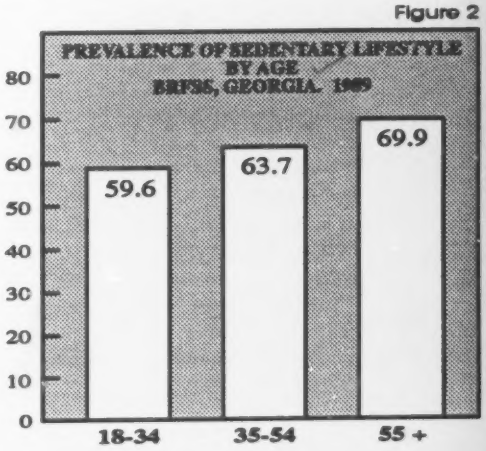


Table 1

Prevalence of Current Sedentary Lifestyle by Selected Characteristics Behavioral Risk Factor Surveillance System

Georgia 1989

Characteristic	Prevalence (%)
Total	64
Sex	
Male	64
Female	63
Race	
White	63
Non-white	65
Age	
18-34	60
35-54	64
55 +	70
Income	
< 10,000	72
10-20,000	67
20-35,000	65
> 35,000	57
Education	
< 9th grade	83
Some High School	72
High School Graduate	65
Beyond High School	57

Survey results also showed that males and females were almost equally likely to lead a sedentary lifestyle (64% vs. 63%) (Table 1), and older adults were more prone to inactivity than younger adults (Figure 2). Overall, sedentary lifestyle decreased as household income and education levels increased (Figures 4 and 5). When physical activity did occur, walking was the most preferred activity (39%), followed by jogging/running (13%), yard work (8%), and aerobics (11%).

Motivation and Intervention

The advice of a doctor or nurse can effectively motivate people to change lifestyle behaviors[4]. When a decision has been reached to exercise, maintaining the activity is largely influenced by the support of a spouse, family, peers and health professionals.

Behavioral techniques such as agreements, behavior contracts and lotteries, and contingency incentives have been shown to increase the frequency of physical activity. However, persons who have no intention of exercising, yet who need it the most, may benefit from a cognitive motivation approach which teaches goal setting, planning, self monitoring and self-reward skills. In addition, persons who are resistive to change may profit more from intervention programs which make them feel good about themselves rather than programs which focus exclusively on the health benefits derived from exercise.[5]

Figure 3

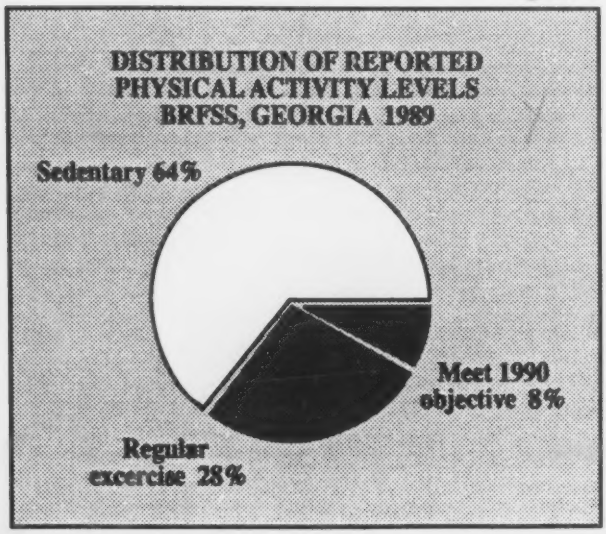


Figure 4

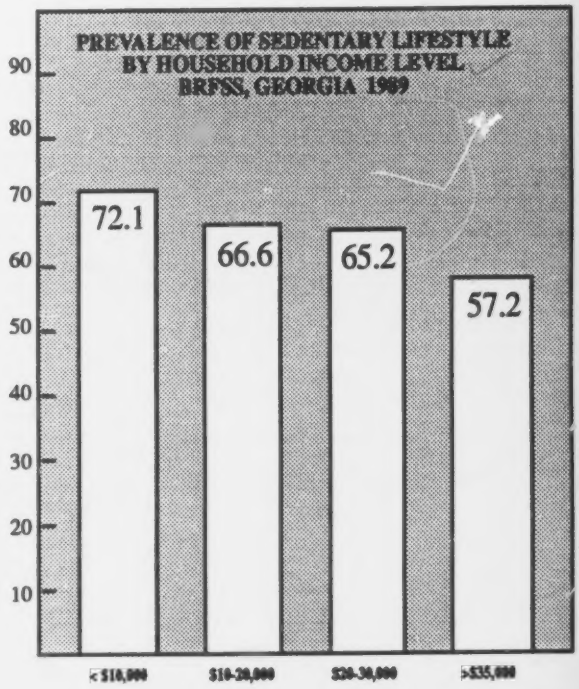
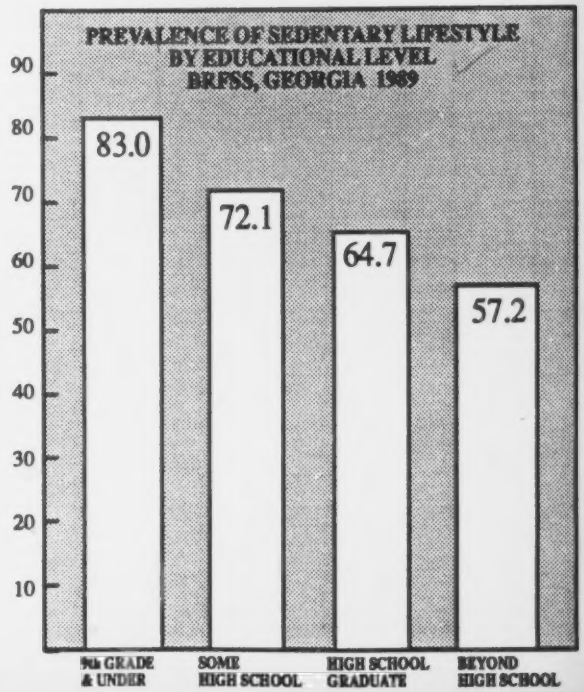


Figure 5



Seatbelt Non-Use

There has been a progressive decrease in the prevalence of seatbelt non-use in Georgia. The majority of Georgians now regularly wear seatbelts.

Seatbelt Non-Use

Respondents who reported using seatbelts sometimes, seldom or never.

Associated Risks:
Injury (especially head and spine), disability, premature death

Motor vehicle crashes are the leading cause of death among young adults in Georgia. Automobile collisions are also responsible for a number of spinal cord injuries and head injuries which can result in permanent disability[1]. The habitual use of automobile seatbelts can substantially reduce the risk of serious injury and premature mortality sustained in a motor vehicle collision.

Since the mandatory seatbelt use law became effective in Georgia in 1988, seatbelt non-use declined dramatically to 25% in 1989 (Table 1). In 1987, prior to enactment of this law, the survey population indicated 53% seatbelt non-use (Figure 1).

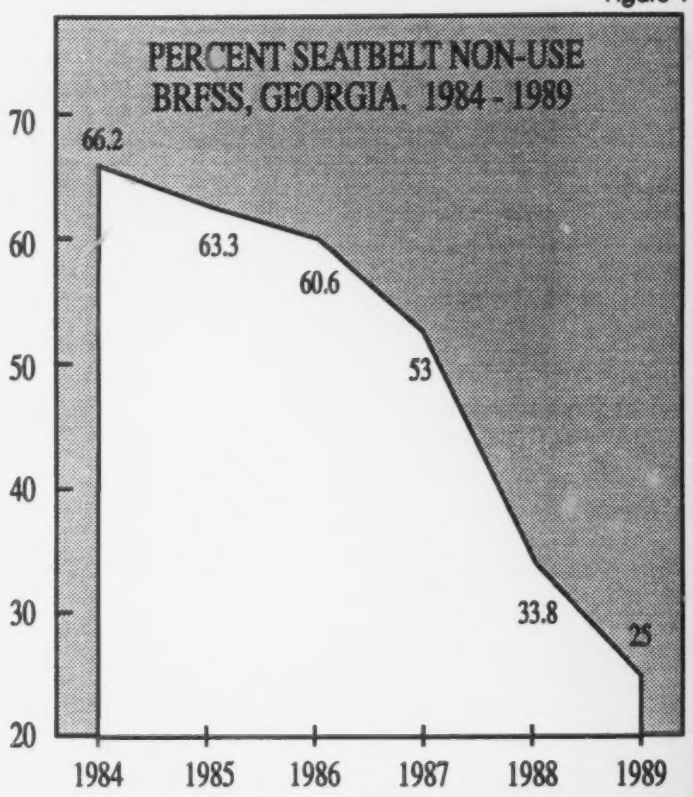
Table 1

Prevalence of Current Seatbelt Non-Use by Selected Characteristics Behavioral Risk Factor Surveillance System

Georgia 1989

Characteristic	Prevalence (%)
Total	25
Sex	
Male	31
Female	20
Race	
White	26
Non-white	21
Age	
18-34	27
35-54	24
55 +	22
Income	
< 10,000	20
10-20,000	29
20-35,000	32
> 35,000	18
Education	
<9th Grade	25
Some High School	33
High School Graduate	29
Beyond High School	20

Figure 1



Some difference in seatbelt non-use was evident between whites and non-whites (26% vs. 21%); men reported a higher prevalence of seatbelt non-use than women (31% vs. 20%). Rates of seatbelt non-use decreased as the age of the respondents increased; younger adults were less likely to use automobile seatbelts; whereas, middle-aged adults (35-54) and older adults (55+) were more likely to comply (Figure 2).

Failure to use seatbelts was highest among respondents categorized in the income groups ($10,000-$20,000 and $20,000-$35,000) and in the middle educational groups (part or all of high school) (Figures 3-4).

Figure 2

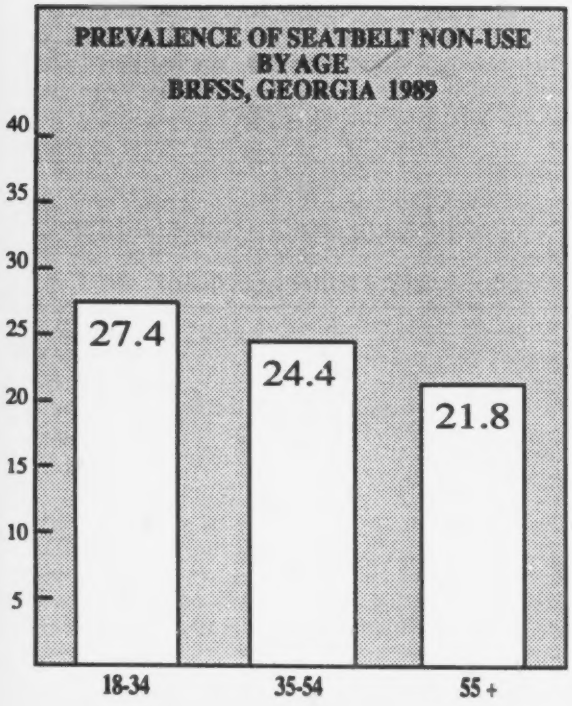
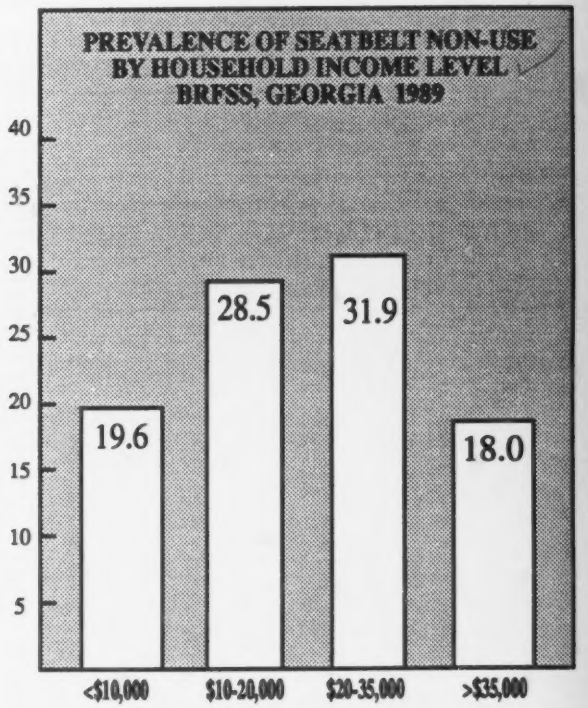


Figure 3



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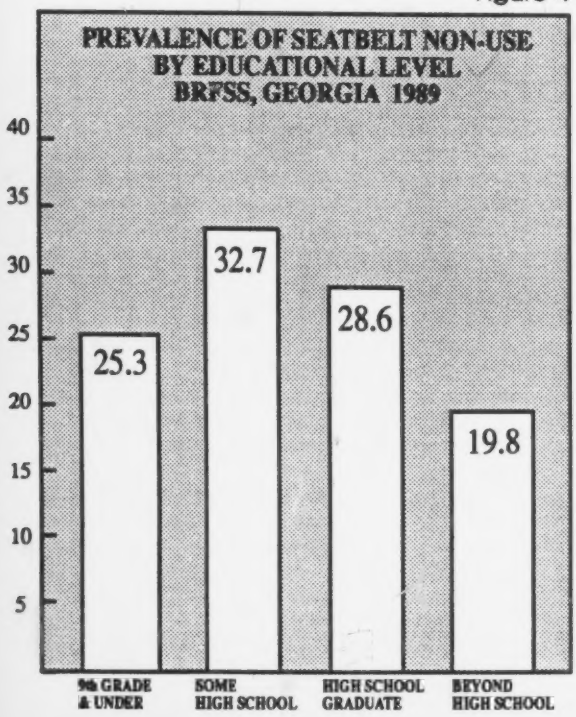


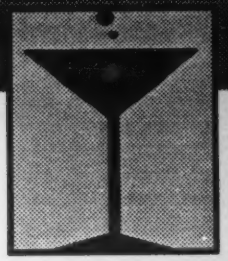
Motivation and Intervention

Consistent use of automobile seatbelts can prevent injuries which have high social and financial costs to society as represented by years of life lost and health care costs. Reasons for seatbelt non-use include discomfort, inconvenience, laziness, fear of entrapment and absence of established habit.[2] Health professionals are an effective agent for motivating and reinforcing seatbelt use. Intervention efforts may center around:

Counseling the individual about the importance of seatbelt use.

Presenting him or her with written information in the form of a pamphlet or brochure.

Alcohol Misuse



In Georgia, men were more likely than women to engage in alcohol misuse such as chronic drinking, binge drinking, or drinking and driving.

Alcohol Misuse

Acute or "Binge" Drinking:

Respondents who reported having five or more drinks on one occasion, one or more times in the past month.

Drinking and Driving:

Respondents who reported driving after having too much to drink, one or more times in the past month.

Chronic Drinking:

Respondents who reported an average of 60 or more alcoholic drinks a month.

Associated Risks:
cirrhosis of the liver, injuries, traffic fatalities, HIV infection, cancer, fetal alcohol syndrome

Alcohol misuse is related to cancers of the mouth, esophagus, and liver.[1] Alcohol abuse is also linked to a number of unintentional injuries involving fires, drownings, falls, and motor vehicle collisions, as well as, intentional injuries resulting from violent behavior. Recent studies suggest that alcohol abuse lowers the effectiveness of the immune system, thereby increasing the risk of human immunodeficiency virus (HIV) infection.[2] In 1989, 2% of Georgians engaged in chronic heavy drinking, 10% in acute or "binge" drinking, and 2% reported driving after having too much to drink. The prevalence of all these behaviors was lower in 1989 than in the previous year (1988).

Table 1

Prevalence of Alcohol Misuse by Selected Characteristics Behavioral Risk Factor Surveillance System

Georgia 1989

Characteristic	Chronic Drinking	Acute Drinking	Drinking & Driving
Total	2	10	2
Sex			
Male	4	15	4
Female	1	6	1
Race			
White	3	11	3
Non-white	1	6	1
Age			
18-34	4	17	4
35-54	1	7	2
55 +	1	2	-
Income			
< 10,000	1	6	-
10-20,000	3	12	2
20-35,000	3	13	4
> 35,000	2	10	2
Education			
< 9th Grade	2	2	1
Some High School	2	10	2
High School Graduate	2	9	1
Beyond High School	2	12	3

Compared to women, men reported a higher prevalence for each of the three alcohol risk factors--chronic drinking (4% vs 1%), acute drinking (15% vs 6%), and drinking and driving (4% vs 1%), (Figures 2,3,4). While no real difference occurred by race for chronic alcohol use and drunk driving, whites were more likely than non-whites to engage in acute or binge drinking (11% vs. 6%) (Figure 5). Acute drinking also occurred more frequently in the 18-34 year age group, (17%) (Figure 6). In general, the prevalence of alcohol misuse was higher in those respondents whose education extended beyond high school. No consistent relationship was observed between alcohol misuse and income.

Figure 1

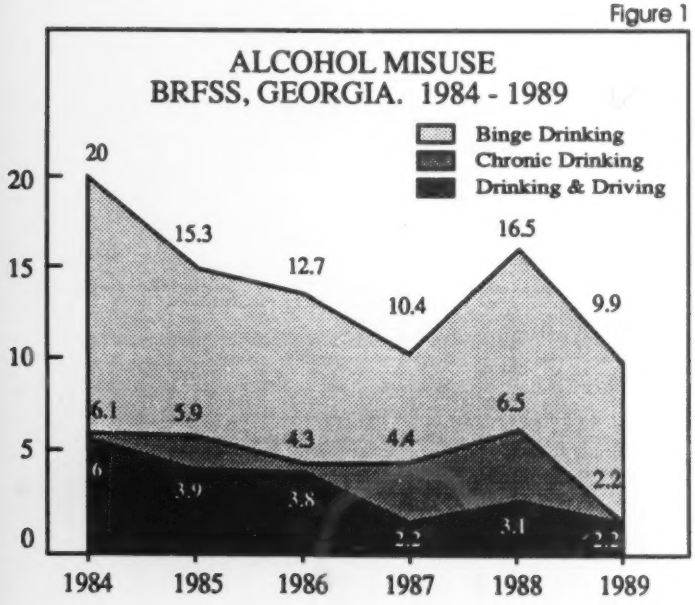
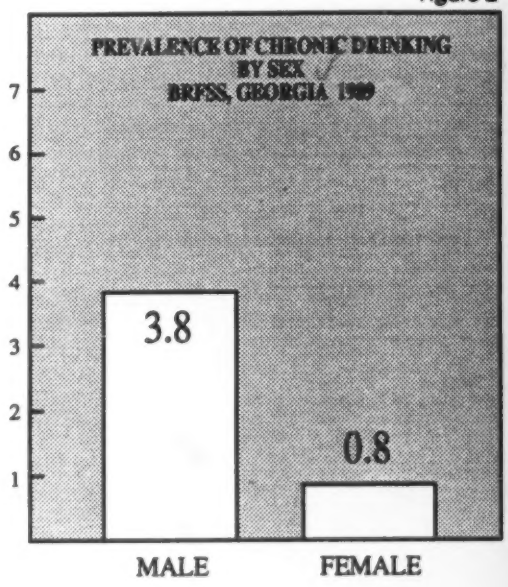


Figure 2



Screening Interventions

Alcoholics rarely seek treatment for alcoholism. However, they do seek general medical care for other kinds of health problems[3]. A study by the National Institute of Mental Health has shown that individuals with alcohol problems are much more likely to visit a medical care provider than a mental health specialist[3]. General medical care settings, therefore, appear to be appropriate sites to screen for alcoholism.

Two methods available for identifying alcoholism are self-report paper and pencil tests, and biochemical tests. One self-report, CAGE, correctly identifies 75 percent of alcoholics and 96 percent of non-alcoholics[3,4]. CAGE consists of four questions.

Have you ever felt the need to "cut down on drinking"?
Have you ever felt "annoyed by criticism" of drinking?
Have you ever had "guilty feelings" about drinking?
Have you ever taken a morning "eye-opener"?

Figure 3

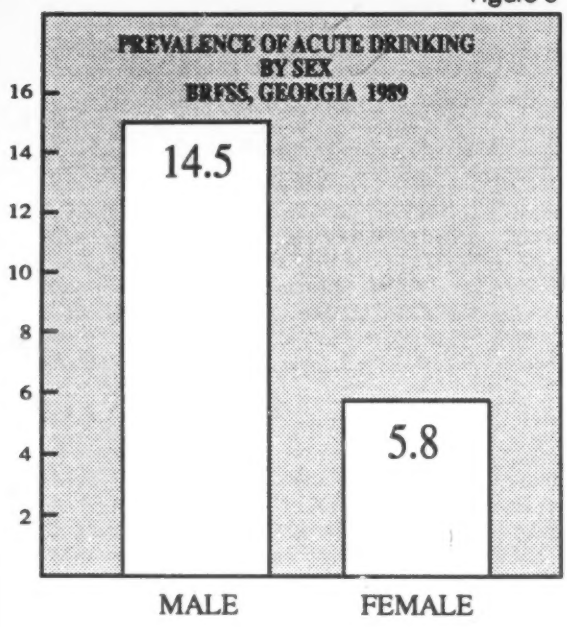


Figure 4

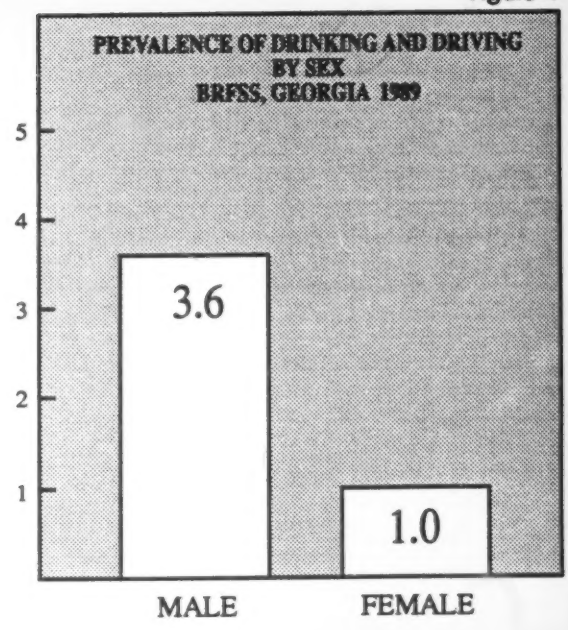


Figure 5

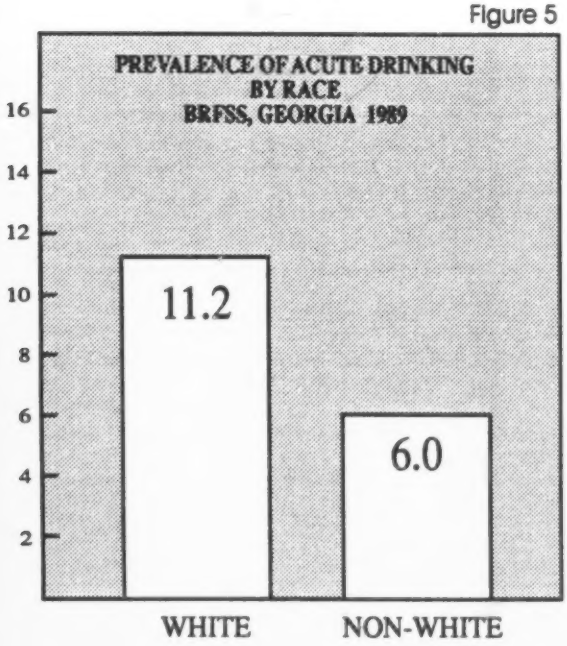
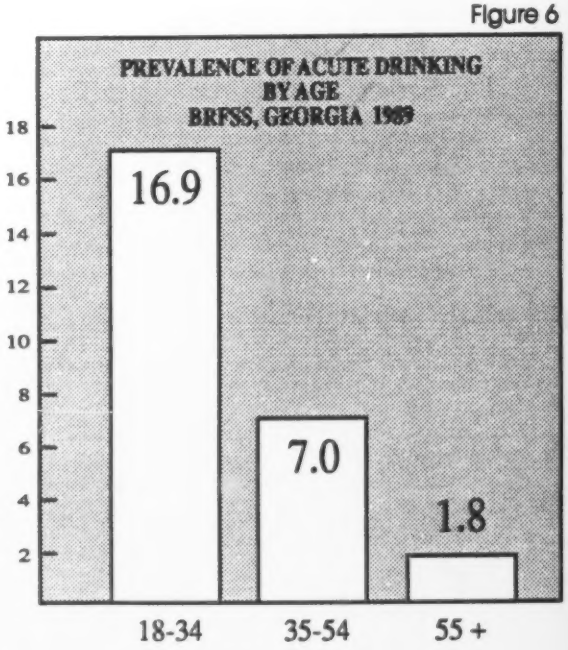


Figure 6



Biochemical testing of two enzymes in blood platelet membranes (monoamine oxidase and adenylate cyclase) is another screening method for identifying alcoholism, as well as a genetic predisposition for alcoholism[4]. Analysis of these two enzymes correctly identifies 75 percent of alcoholics and 73 percent of non-alcoholics. Identifying persons who suffer from alcoholism through screening procedures may increase the likelihood that they will undergo treatment.

Preventive Health Practices

In 1989, 69% of all persons surveyed by the BRFSS had had a checkup within the past year, 52% had their blood cholesterol checked, but of the women surveyed only 42% had ever had a mammogram.

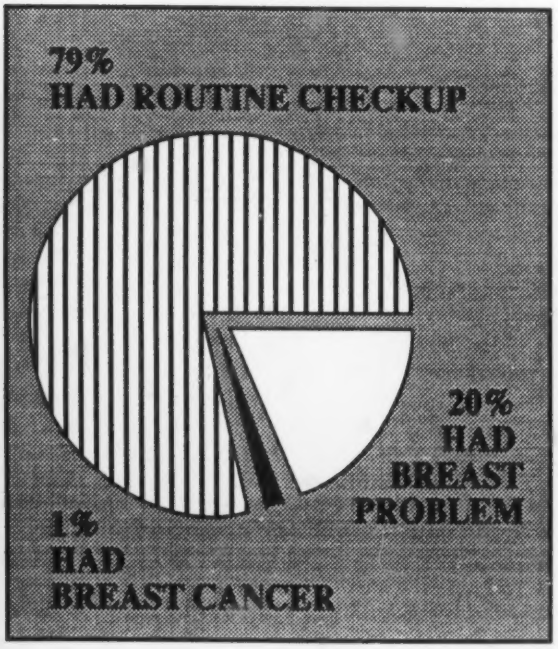
Mammography

Breast cancer is a leading cause of death among women over 45 years of age in Georgia. In 1989, cancer of the female breast accounted for 780 deaths (a rate of 77.3 per 100,000) in this age group. Early detection of breast cancer through breast self examination, periodic clinical examination and mammography (breast x-ray) can improve survival rates .[1]

In 1989, only 42% of the women surveyed by the BRFSS had ever had a mammogram; 67% of these were in the past year. About 79% of the women who had ever had a mammogram did so as part of a routine medical checkup, while approximately 20% received the x-ray because of a breast problem (Figure 1). The remaining women who underwent mammography had been diagnosed with breast cancer. Middle-aged (35-54) and older (55+) women were more likely to have had a breast x-ray than younger women (18-34), who accounted for only 19% of the mammograms reported (Figure 2).

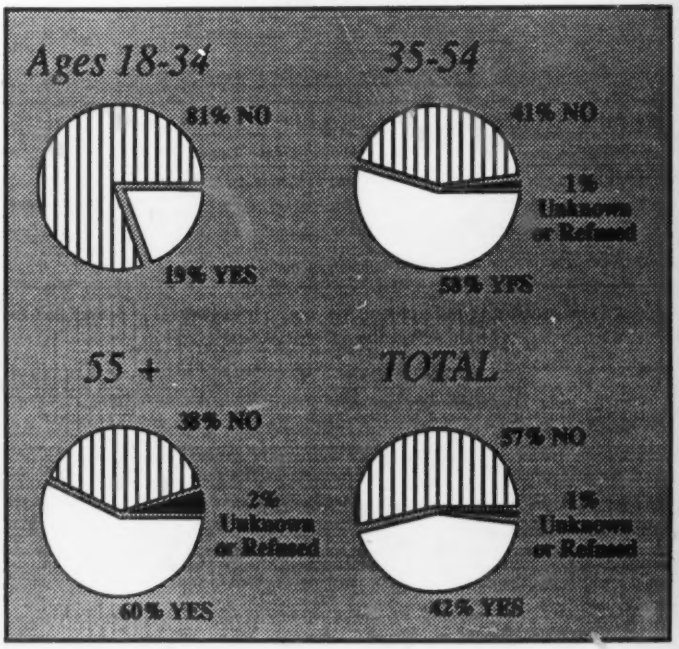
REASON FOR HAVING A MAMMOGRAM BRFSS, GEORGIA, 1989

Figure 1



% OF FEMALE RESPONDENTS WHO HAVE HAD A MAMMOGRAM BY AGE GROUP BRFSS, GEORGIA, 1989

Figure 2



Routine Medical Checkup

Approximately 69% of the adults surveyed by the 1989 BRFSS reported having had a routine checkup within the past year (Figure 1). Female respondents were more likely than male respondents to have undergone a recent checkup (76% vs. 61%) (Figure 2).

Figure 1

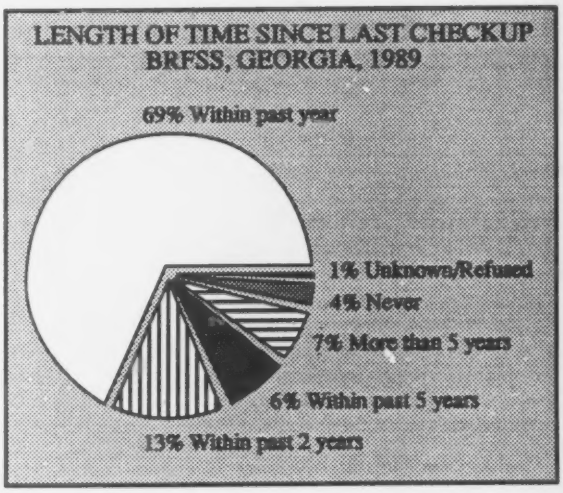
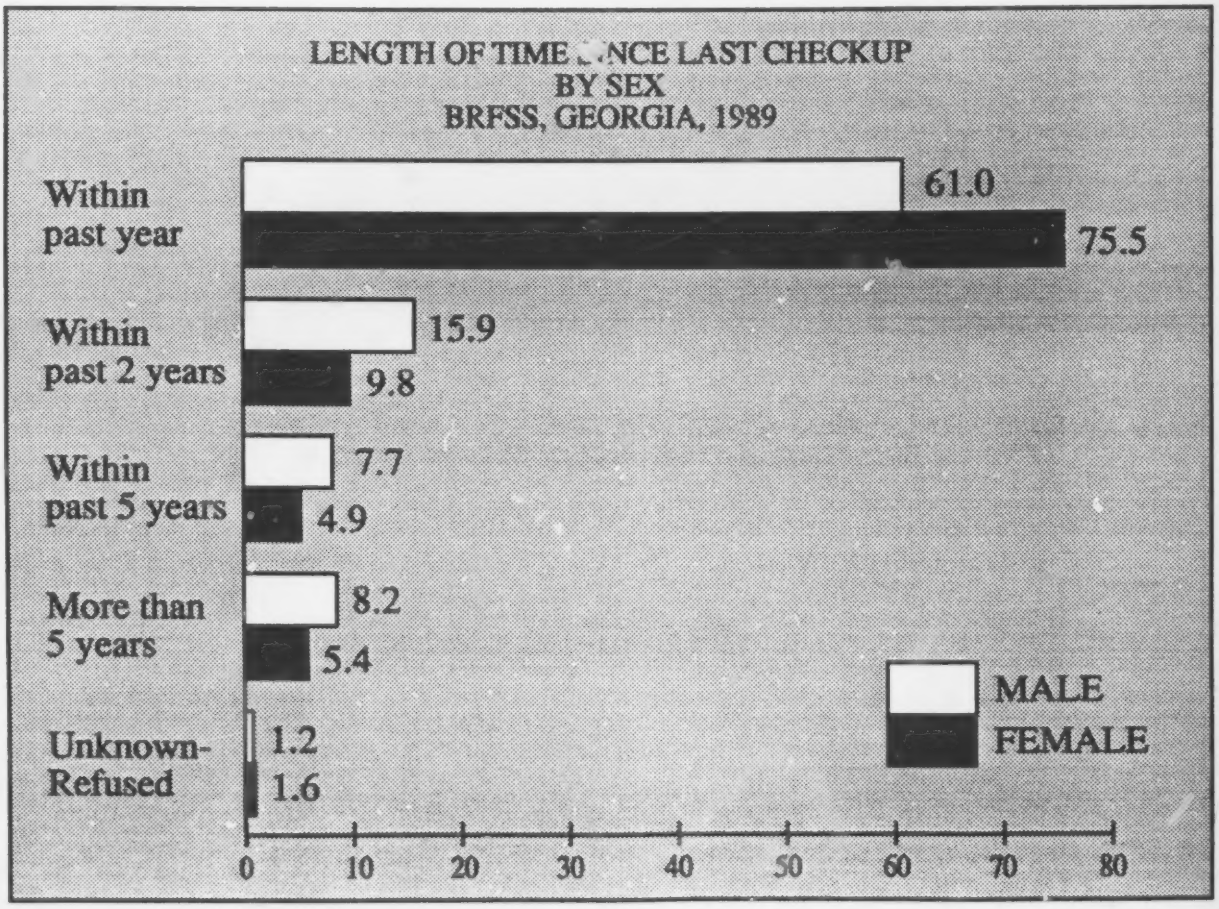

LENGTH OF TIME SINCE LAST CHECKUP
BRFSS, GEORGIA, 1989
69% Within past year
1% Unknown/Refused
4% Never
7% More than 5 years
6% Within past 5 years
13% Within past 2 years

Figure 2



Cholesterol

Elevated blood cholesterol or hypercholesterolemia is a major risk factor for cardiovascular disease. Individuals with blood cholesterol levels which exceed 240 mg/dl are considered hypercholesterolemic[1]. To minimize the risk of developing blocked blood vessels, a total blood cholesterol level of less than 200 mg/dl is advised[2]. Measures to reduce serum cholesterol include dietary fat restrictions, periodic cholesterol screening and exercise.

Only 52% of the adults surveyed by the BRFSS reported that they had ever had their blood cholesterol level checked (Figure 1). Of those who did, 83% indicated doing so within the past year.

Blood cholesterol checks were reported for a slightly larger percentage of women than men (54% vs. 50%) (Figure 1), and more women than men were told that their cholesterol level was high (26% vs. 17%) (Figure 2). Women were also more likely than men to have been advised by a doctor to reduce their blood cholesterol levels (19% vs. 11%).

PERCENT OF RESPONDENTS WHO REPORTED HAVING HAD THEIR BLOOD CHOLESTEROL CHECKED
BRFSS, GEORGIA, 1989

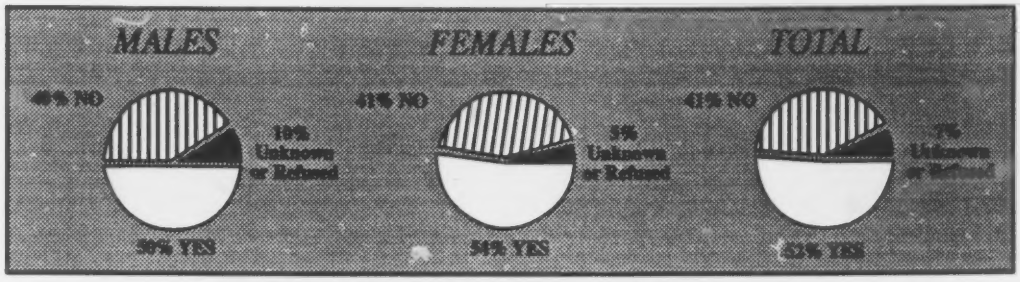


Figure 1

PERCENT OF RESPONDENTS WHO REPORTED HAVING BEEN TOLD THEIR BLOOD CHOLESTEROL WAS HIGH
BRFSS, GEORGIA, 1989

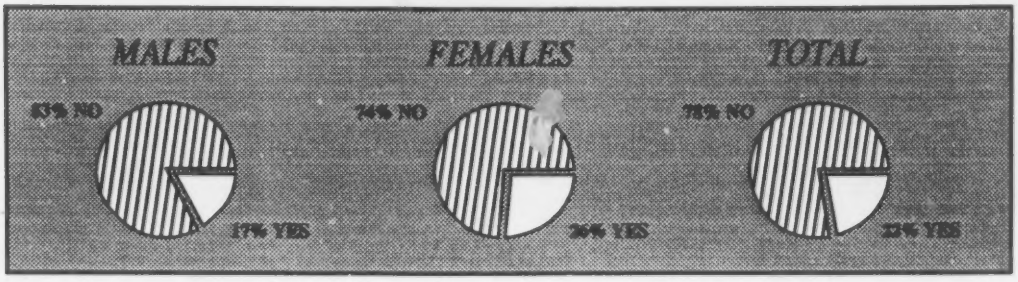


Figure 2

DISTRICT RISK PREVALENCE RATES

IMPORTANT NOTE:

1989 was only the second year that county of residence information was collected by the Behavioral Risk Factor Surveillance System, allowing data to be aggregated by health district. These data should not be used in and by themselves to make judgements as to how a particular district compares to the state or another district. Such comparisons must await the accumulation of several years worth of data to provide sufficient numbers to indicate trends.

Behavioral Risk Factor Survey - Georgia 1989
District 1-1, Rome

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	31	23	24
Seatbelt Non-use	31	25	29
*Hypertension	19	17	17
Acute Drinking	6	10	15
Chronic Drinking	1	2	4
Drinking/Driving	4	2	3
**Obesity (Overweight)	21	23	25
Sedentary Lifestyle	67	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 1-2, Dalton

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	23	23	24
Seatbelt Non-use	20	25	29
*Hypertension	8	17	17
Acute Drinking	2	10	15
Chronic Drinking	0	2	4
Drinking/Driving	2	2	3
**Obesity (Overweight)	16	23	25
Sedentary Lifestyle	79	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 2-0, Gainesville

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	24	23	24
Seatbelt Non-use	31	25	29
*Hypertension	17	17	17
Acute Drinking	7	10	15
Chronic Drinking	2	2	4
Drinking/Driving	0	2	3
**Obesity (Overweight)	16	23	25
Sedentary Lifestyle	80	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 3-1, Cobb

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	23	23	24
Seatbelt Non-use	23	25	29
*Hypertension	18	17	17
Acute Drinking	15	10	15
Chronic Drinking	1	2	4
Drinking/Driving	2	2	3
**Obesity (Overweight)	17	23	25
Sedentary Lifestyle	62	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 3-2, Fulton

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	19	23	24
Seatbelt Non-use	22	25	29
*Hypertension	16	17	17
Acute Drinking	13	10	15
Chronic Drinking	3	2	4
Drinking/Driving	2	2	3
**Obesity (Overweight)	19	23	25
Sedentary Lifestyle	63	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 3-3, Clayton

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	18	23	24
Seatbelt Non-use	20	25	29
*Hypertension	3	17	17
Acute Drinking	9	10	15
Chronic Drinking	5	2	4
Drinking/Driving	0	2	3
**Obesity (Overweight)	25	23	25
Sedentary Lifestyle	76	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 3-4, Gwinnett

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	31	23	24
Seatbelt Non-use	21	25	29
*Hypertension	11	17	17
Acute Drinking	10	10	15
Chronic Drinking	2	2	4
Drinking/Driving	3	2	3
**Obesity (Overweight)	18	23	25
Sedentary Lifestyle	68	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 3-5, DeKalb

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	19	23	24
Seatbelt Non-use	19	25	29
*Hypertension	13	17	17
Acute Drinking	5	10	15
Chronic Drinking	3	2	4
Drinking/Driving	3	2	3
**Obesity (Overweight)	18	23	25
Sedentary Lifestyle	60	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 4-0, LaGrange

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	22	23	24
Seatbelt Non-use	31	25	29
*Hypertension	15	17	17
Acute Drinking	9	10	15
Chronic Drinking	3	2	4
Drinking/Driving	2	2	3
**Obesity (Overweight)	20	23	25
Sedentary Lifestyle	60	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 5-1, Dublin

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	27	23	24
Seatbelt Non-use	39	25	29
*Hypertension	23	17	17
Acute Drinking	5	10	15
Chronic Drinking	5	2	4
Drinking/Driving	0	2	3
**Obesity (Overweight)	25	23	25
Sedentary Lifestyle	74	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 5-2, Macon

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	24	23	24
Seatbelt Non-use	25	25	29
*Hypertension	32	17	17
Acute Drinking	4	10	15
Chronic Drinking	0	2	4
Drinking/Driving	0	2	3
**Obesity (Overweight)	37	23	25
Sedentary Lifestyle	62	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 6-0, Augusta

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	23	23	24
Seatbelt Non-use	25	25	29
*Hypertension	18	17	17
Acute Drinking	10	10	15
Chronic Drinking	2	2	4
Drinking/Driving	0	2	3
**Obesity (Overweight)	28	23	25
Sedentary Lifestyle	63	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 7-0, Columbus

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	16	23	24
Seatbelt Non-use	15	25	29
*Hypertension	28	17	17
Acute Drinking	12	10	15
Chronic Drinking	4	2	4
Drinking/Driving	2	2	3
**Obesity (Overweight)	32	23	25
Sedentary Lifestyle	49	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 8-1, Valdosta

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	24	23	24
Seatbelt Non-use	44	25	29
*Hypertension	14	17	17
Acute Drinking	7	10	15
Chronic Drinking	3	2	4
Drinking/Driving	0	2	3
**Obesity (Overweight)	15	23	25
Sedentary Lifestyle	63	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 8-2, Albany

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	30	23	24
Seatbelt Non-use	26	25	29
*Hypertension	25	17	17
Acute Drinking	17	10	15
Chronic Drinking	1	2	4
Drinking/Driving	5	2	3
**Obesity (Overweight)	34	23	25
Sedentary Lifestyle	61	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 9-1, Savannah

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	30	23	24
Seatbelt Non-use	26	25	29
*Hypertension	21	17	17
Acute Drinking	13	10	15
Chronic Drinking	0	2	4
Drinking/Driving	8	2	3
**Obesity (Overweight)	37	23	25
Sedentary Lifestyle	54	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 9-2, Waycross

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	25	23	24
Seatbelt Non-use	28	25	29
*Hypertension	29	17	17
Acute Drinking	6	10	15
Chronic Drinking	0	2	4
Drinking/Driving	0	2	3
**Obesity (Overweight)	39	23	25
Sedentary Lifestyle	71	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 9-3, Brunswick

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	23	23	24
Seatbelt Non-use	24	25	29
*Hypertension	16	17	17
Acute Drinking	8	10	15
Chronic Drinking	2	2	4
Drinking/Driving	0	2	3
**Obesity (Overweight)	21	23	25
Sedentary Lifestyle	62	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

Behavioral Risk Factor Survey - Georgia 1989
District 10, Athens

Risk Factor	District Rate (%)	State Rate (%)	National Median Prevalence (1989)
Smoking	14	23	24
Seatbelt Non-use	12	25	29
*Hypertension	12	17	17
Acute Drinking	28	10	15
Chronic Drinking	5	2	4
Drinking/Driving	0	2	3
**Obesity (Overweight)	22	23	25
Sedentary Lifestyle	55	64	59

*Respondents who had been told more than once that their blood pressure was high, or were on medication, or reported their blood pressure was still high at the time of the interview.

**Respondents who weighed at or above 120% of "Ideal Body Weight" (the mid-value of a median frame person based upon the 1959 Metropolitan Life Insurance height-weight tables). Calculations for Ideal Body Weight were based on self-reported weight and height.

CHALLENGE BY STATE

1989 Behavioral Risk Factor Surveillance Data
Prevalence of Hypertension*
Participating States - 1989

STATE	SAMPLE SIZE	PERCENT	(+/- 95% CI)
Alabama	1805	17.28	(1.93)
Arizona	1492	16.84	(2.15)
California	2391	15.32	(1.69)
Connecticut	1356	16.30	(2.31)
District of Co.	1486	16.34	(2.15)
Florida	1683	19.36	(2.06)
Georgia	1602	17.37 (15th)	(2.05)
Hawaii	1860	17.18	(2.02)
Idaho	1742	13.14	(1.63)
Illinois	1780	18.93	(1.98)
Indiana	2166	19.37	(1.80)
Iowa	1286	15.82	(2.16)
Kentucky	1794	18.51	(1.91)
Maine	1246	15.82	(2.31)
Maryland	1708	17.13	(1.99)
Massachusetts	1221	18.43	(2.53)
Michigan	2362	19.60	(1.75)
Minnesota	3415	15.25	(1.29)
Missouri	1499	17.23	(2.09)
Montana	1182	16.31	(2.13)
Nebraska	1429	16.66	(2.05)
New Hampshire	1362	15.26	(2.09)
New Mexico	1171	13.22	(2.19)
New York	1314	16.06	(2.30)
North Carolina	1763	17.68	(2.05)
North Dakota	1620	18.08	(1.95)
Ohio	1427	15.91	(2.15)
Oklahoma	1172	16.99	(2.31)
Oregon	1691	16.93	(1.89)
Pennsylvania	1814	19.86	(2.14)
Rhode Island	1793	18.87	(2.10)
South Carolina	1851	19.05	(1.91)
South Dakota	1784	15.61	(1.84)
Tennessee	2389	18.38	(1.67)
Texas	1490	18.04	(2.36)
Utah	1788	14.88	(1.63)
Virginia	1431	18.73	(2.49)
Washington	1512	17.27	(2.01)
West Virginia	1714	20.27	(2.05)
Wisconsin	1276	15.91	(2.20)

*Defined as blood pressure still high, told more than once their blood pressure was high or are on medication

*Self-reported telephone survey data

CI = Confidence Interval

1989 Behavioral Risk Factor Surveillance Data
Prevalence of Overweight*
Participating States - 1989

STATE	SAMPLE SIZE	PERCENT	(+/- 95% CI)
Alabama	1805	23.90	(2.11)
Arizona	1492	23.51	(2.41)
California	2391	21.04	(1.93)
Connecticut	1356	23.06	(2.63)
District of Co.	1486	27.59	(2.69)
Florida	1683	25.48	(2.33)
Georgia	1602	23.23 (25th)	(2.36)
Hawaii	1860	20.49	(2.31)
Idaho	1742	21.60	(2.04)
Illinois	1780	27.16	(2.35)
Indiana	2166	27.74	(2.05)
Iowa	1286	29.58	(2.78)
Kentucky	1794	26.55	(2.36)
Maine	1246	24.28	(2.58)
Maryland	1708	22.39	(2.19)
Massachusetts	1221	24.60	(2.64)
Michigan	2362	28.59	(2.04)
Minnesota	3415	25.46	(1.60)
Missouri	1499	23.25	(2.26)
Montana	1182	21.90	(2.55)
Nebraska	1429	25.75	(2.43)
New Hampshire	1362	23.29	(2.43)
New Mexico	1171	19.18	(2.66)
New York	1314	23.13	(2.83)
North Carolina	1763	25.53	(2.33)
North Dakota	1620	28.04	(2.36)
Ohio	1427	25.09	(2.67)
Oklahoma	1172	22.88	(2.77)
Oregon	1691	24.60	(2.24)
Pennsylvania	1814	30.83	(2.39)
Rhode Island	1793	23.15	(2.37)
South Carolina	1851	25.07	(2.23)
South Dakota	1784	25.43	(2.19)
Tennessee	2389	23.71	(1.87)
Texas	1490	21.68	(2.43)
Utah	1788	19.80	(1.98)
Virginia	1431	24.93	(2.68)
Washington	1512	24.45	(2.28)
West Virginia	1714	28.11	(2.42)
Wisconsin	1276	27.09	(2.63)

*Defined as weight for height greater than 120% of the mid value of a median frame person

*Self-reported telephone survey data

CI = Confidence Interval

1989 Behavioral Risk Factor Surveillance Data
Prevalence of Sedentary Lifestyle*
Participating States - 1989

STATE	SAMPLE SIZE	PERCENT	(+/- 95% CI)
Alabama	1805	59.15	(2.60)
Arizona	1492	49.05	(2.94)
California	2391	52.09	(2.41)
Connecticut	1356	56.92	(2.94)
District of Co.	1486	74.72	(2.61)
Florida	1683	51.61	(2.64)
Georgia	1602	63.58 (8th)	(2.71)
Hawaii	1860	53.85	(2.76)
Idaho	1742	57.63	(2.63)
Illinois	1780	61.49	(2.49)
Indiana	2166	61.55	(2.33)
Iowa	1286	62.99	(3.12)
Kentucky	1794	69.00	(2.44)
Maine	1246	63.75	(2.90)
Maryland	1708	61.76	(2.88)
Massachusetts	1221	54.59	(3.08)
Michigan	2362	60.42	(2.14)
Minnesota	3415	58.69	(1.87)
Missouri	1499	62.32	(2.83)
Montana	1182	49.75	(2.97)
Nebraska	1429	61.28	(2.78)
New Hampshire	1362	44.73	(2.91)
New Mexico	1171	56.33	(3.03)
New York	1314	73.08	(2.78)
North Carolina	1763	62.79	(2.77)
North Dakota	1620	55.58	(2.82)
Ohio	1427	63.44	(2.97)
Oklahoma	1172	71.24	(3.02)
Oregon	1691	46.50	(2.64)
Pennsylvania	1814	57.17	(2.66)
Rhode Island	1793	58.73	(2.67)
South Carolina	1851	68.19	(2.51)
South Dakota	1784	54.10	(2.61)
Tennessee	2389	64.33	(2.29)
Texas	1490	53.00	(2,91)
Utah	1788	49.10	(2.70)
Virginia	1431	57.68	(3.01)
Washington	1512	49.85	(2.73)
West Virginia	1714	66.15	(2.72)
Wisconsin	1276	57.68	(2.94)

*Defined as less than 20 minutes of exercise, less than 3 times a week
*Self-reported telephone survey data
CI = Confidence Interval

1989 Behavioral Risk Factor Surveillance Data
Prevalence of Current Smoking*
Participating States - 1989

STATE	SAMPLE SIZE	PERCENT	(+/- 95% CI)
Alabama	1805	21.90	(2.14)
Arizona	1492	25.23	(2.62)
California	2391	21.44	(1.89)
Connecticut	1356	26.58	(2.61)
District of Co.	1486	21.92	(2.59)
Florida	1683	24.55	(2.30)
Georgia	1602	23.17 (18th)	(2.28)
Hawaii	1860	21.82	(2.20)
Idaho	1742	19.20	(2.04)
Illinois	1780	25.56	(2.20)
Indiana	2166	27.01	(2.01)
Iowa	1286	22.70	(2.57)
K ntucky	1794	30.36	(2.61)
Maine	1246	27.17	(2.50)
Maryland	1708	21.97	(2.26)
Massachusetts	1221	23.64	(2.72)
Michigan	2362	27.53	(2.02)
Minnesota	3415	20.96	(1.47)
Missouri	1499	25.94	(2.54)
Montana	1182	19.43	(2.40)
Nebraska	1429	22.31	(2.35)
New Hampshire	1362	24.82	(2.56)
New Mexico	1171	22.10	(2.56)
New York	1314	23.35	(2.76)
North Carolina	1763	26.55	(2.50)
North Dakota	1620	20.44	(2.12)
Ohio	1427	26.57	(2.80)
Oklahoma	1172	26.73	(2.93)
Oregon	1691	23.36	(2.27)
Pennsylvania	1814	26.97	(2.29)
Rhode Island	1793	26.09	(2.30)
South Carolina	1851	24.15	(2.23)
South Dakota	1784	21.77	(2.05)
Tennessee	2389	27.03	(2.02)
Texas	1490	21.83	(2.36)
Utah	1788	16.40	(2.16)
Virginia	1431	25.04	(2.63)
Washington	1512	24.15	(2.35)
West Virginia	1714	27.60	(2.64)
Wisconsin	1276	26.02	(2.62)

*Defined as ever smoked 100 cigarettes and smoke now
*Self-reported telephone survey data
CI = Confidence Interval

1989 Behavioral Risk Factor Surveillance Data
Prevalence of Seatbelt Non-use*
Participating States - 1989

STATE	SAMPLE SIZE	PERCENT	(+/- 95% CI)
Alabama	1805	42.55	(2.53)
Arizona	1492	33.11	(2.85)
California	2391	16.35	(1.75)
Connecticut	1356	24.73	(2.58)
District of Co.	1486	26.51	(2.62)
Florida	1683	17.83	(2.09)
Georgia	1602	25.01 (26th)	(2.52)
Hawaii	1860	6.34	(1.54)
Idaho	1742	31.81	(2.55)
Illinois	1780	30.92	(2.54)
Indiana	2166	30.70	(2.16)
Iowa	1286	23.15	(2.73)
Kentucky	1794	47.85	(2.72)
Maine	1246	46.39	(3.03)
Maryland	1708	16.09	(2.02)
Massachusetts	1221	48.52	(3.17)
Michigan	2362	20.33	(1.90)
Minnesota	3415	23.91	(1.63)
Missouri	1499	28.07	(2.58)
Montana	1182	27.76	(2.97)
Nebraska	1429	56.50	(2.77)
New Hampshire	1362	48.16	(2.94)
New Mexico	1171	14.71	(2.27)
New York	1314	18.45	(2.46)
North Carolina	1763	15.28	(1.99)
North Dakota	1620	58.19	(2.78)
Ohio	1427	28.01	(2.83)
Oklahoma	1172	29.22	(3.13)
Oregon	1691	34.82	(2.55)
Pennsylvania	1814	30.31	(2.42)
Rhode Island	1793	47.05	(2.60)
South Carolina	1851	38.72	(2.71)
South Dakota	1784	61.92	(2.60)
Tennessee	2389	29.11	(2.09)
Texas	1490	14.97	(2.09)
Utah	1788	34.58	(2.66)
Virginia	1431	16.14	(2.50)
Washington	1512	15.12	(1.99)
West Virginia	1714	52.13	(2.86)
Wisconsin	1276	27.58	(2.69)

*Defined as sometimes, seldom or never wear seatbelts
*Self-reported telephone survey data
CI = Confidence Interval

1989 Behavioral Risk Factor Surveillance Data
Prevalence of Drinking & Driving*
Participating States - 1989

STATE	SAMPLE SIZE	PERCENT	(+/- 95% CI)
Alabama	1805	2.06	(0.75)
Arizona	1492	3.42	(1.07)
California	2391	3.55	(0.96)
Connecticut	1356	3.06	(1.00)
District of Co.	1486	2.51	(0.89)
Florida	1683	2.5[illegible]	(0.92)
Georgia	1602	2.2[illegible] (29th)	(0.90)
Hawaii	1860	3.95	(1.12)
Idaho	1742	2.17	(0.85)
Illinois	1780	2.80	(0.85)
Indiana	2166	2.23	(0.69)
Iowa	1286	4.15	(1.42)
Kentucky	1794	1.60	(0.73)
Maine	1246	2.01	(0.84)
Maryland	1708	1.07	(0.66)
Massachusetts	1221	3.29	(1.14)
Michigan	2362	4.43	(0.99)
Minnesota	3415	3.76	(0.70)
Missouri	1499	2.64	(0.92)
Montana	1182	4.98	(1.57)
Nebraska	1429	4.44	(1.26)
New Hampshire	1362	3.52	(1.24)
New Mexico	1171	4.03	(1.42)
New York	1314	1.28	(0.66)
North Carolina	1763	1.57	(0.75)
North Dakota	1620	5.90	(1.36)
Ohio	1427	2.83	(1.21)
Oklahoma	1172	2.33	(0.92)
Oregon	1691	3.51	(1.13)
Pennsylvania	1814	3.65	(1.03)
Rhode Island	1793	2.97	(1.01)
South Carolina	1851	2.40	(0.91)
South Dakota	1784	4.92	(1.17)
Tennessee	2389	1.70	(0.64)
Texas	1490	5.60	(1.39)
Utah	1788	1.52	(0.70)
Virginia	1431	2.92	(1.01)
Washington	1512	2.55	(0.86)
West Virginia	1714	1.52	(0.81)
Wisconsin	1276	5.73	(1.40)

*Defined as driving after having too much to drink, one or more times in the past month

*Self-reported telephone survey data

CI = Confidence Interval

1989 Behavioral Risk Factor Surveillance Data
Prevalence of Binge Drinking*
Participating States - 1989

STATE	SAMPLE SIZE	PERCENT	(+/- 95% CI)
Alabama	1805	8.90	(1.56)
Arizona	1492	18.26	(2.27)
California	2391	16.99	(1.75)
Connecticut	1356	17.56	(2.49)
District of Co.	1486	6.65	(1.35)
Florida	1683	15.36	(2.00)
Georgia	1602	9.91 (33rd)	(1.85)
Hawaii	1860	19.66	(2.26)
Idaho	1742	11.49	(1.95)
Illinois	1780	15.12	(1.95)
Indiana	2166	14.01	(1.83)
Iowa	1286	16.56	(2.73)
Kentucky	1794	10.02	(1.77)
Maine	1246	13.90	(2.25)
Maryland	1708	6.91	(1.56)
Massachusetts	1221	21.00	(2.72)
Michigan	2362	18.66	(1.80)
Minnesota	3415	20.36	(1.54)
Missouri	1499	13.67	(1.98)
Montana	1182	18.43	(2.46)
Nebraska	1429	16.43	(2.23)
New Hampshire	1362	17.70	(2.37)
New Mexico	1171	15.39	(2.41)
New York	1314	8.68	(2.01)
North Carolina	1763	9.49	(1.71)
North Dakota	1620	19.66	(2.28)
Ohio	1427	16.16	(2.48)
Oklahoma	1172	9.65	(1.96)
Oregon	1691	15.41	(2.05)
Pennsylvania	1814	20.18	(2.12)
Rhode Island	1793	15.04	(2.00)
South Carolina	1851	10.86	(1.79)
South Dakota	1784	17.78	(2.04)
Tennessee	2389	6.65	(1.22)
Texas	1490	18.49	(2.32)
Utah	1788	11.95	(1.87)
Virginia	1431	16.75	(2.38)
Washington	1512	16.22	(2.10)
West Virginia	1714	10.54	(2.01)
Wisconsin	1276	26.73	(2.64)

*Defined as having 5 or more drinks on an occasion one or more times in the past month

*Self-reported telephone survey data

CI = Confidence Interval

1989 Behavioral Risk Factor Surveillance Data
Prevalence of Chronic Drinking*
Participating States - 1989

STATE	SAMPLE SIZE	PERCENT	(+/- 95% CI)
Alabama	1805	2.31	(0.90)
Arizona	1492	5.52	(1.45)
California	2391	4.03	(0.88)
Connecticut	1356	4.58	(1.33)
District of Co.	1486	3.22	(0.97)
Florida	1683	5.01	(1.21)
Georgia	1602	2.19 (37th)	(0.84)
Hawaii	1860	6.62	(1.37)
Idaho	1742	3.40	(1.04)
Illinois	1780	4.54	(1.16)
Indiana	2166	3.54	(0.93)
Iowa	1286	4.16	(1.37)
Kentucky	1794	3.57	(1.05)
Maine	1246	2.49	(0.95)
Maryland	1708	3.26	(1.09)
Massachusetts	1221	6.11	(1.61)
Michigan	2362	4.66	(1.04)
Minnesota	3415	3.85	(0.75)
Missouri	1499	4.26	(1.11)
Montana	1182	3.29	(1.25)
Nebraska	1429	3.02	(1.06)
New Hampshire	1362	6.11	(1.49)
New Mexico	1171	4.26	(1.43)
New York	1314	1.85	(0.77)
North Carolina	1763	2.77	(0.93)
North Dakota	1620	2.95	(1.01)
Ohio	1427	4.25	(1.29)
Oklahoma	1172	2.23	(1.00)
Oregon	1691	4.30	(1.10)
Pennsylvania	1814	5.80	(1.29)
Rhode Island	1793	4.15	(1.11)
South Carolina	1851	2.21	(0.75)
South Dakota	1784	2.77	(0.85)
Tennessee	2389	1.96	(0.71)
Texas	1490	6.17	(1.52)
Utah	1788	2.49	(0.88)
Virginia	1431	3.27	(1.11)
Washington	1512	4.66	(1.13)
West Virginia	1714	2.45	(1.02)
Wisconsin	1276	5.61	(1.38)

*Defined as having sixty or more drinks during the past month
*Self-reported telephone survey data
CI = Confidence Interval

APPENDIX

SURVEY QUESTIONS FOR SEVEN KEY RISK FACTORS

Cigarette Smoking

I'd like to ask you a few questions about cigarette smoking. Have you smoked at least 100 cigarettes in your entire life? If YES

Do you smoke cigarettes now? If YES

On the average, about how many cigarettes a day do you now smoke? ANY ANSWER EXCEPT "DON'T SMOKE REGULARLY"

Seatbelt Use

How often do you use seatbelts when you drive or ride in a car? Would you say always, nearly always, sometimes, seldom, or never?

Use:	ALWAYS OR ALMOST ALWAYS
Infrequent or nonuse:	SOMETIMES, SELDOM, OR NEVER

Lack of exercise

The next few questions are about excercise, recreation, or physical activities other than your regular job duties. During the past month, did you participate in any physical activities or exercise such as running, calisthenics, golf, gardening or walking for excercise? NO

Overweight

About how much do you weigh without shoes?
About how tall are you without shoes?

Overweight was defined as being at or above 120% of "Ideal Body Weight" (the mid value of a median frame person) based upon the 1959 Metropolitan Life Insurance Tables of Weight for Height.

Hypertension

These next few questions are about hypertension or high blood pressure. Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure? YES

Chronic Drinking
1984-1988

These next few questions are about the use of beer, wine, or liquor - all kinds of alcoholic beverages that people drink at meals, special occasions, or when just relaxing.

Have you had any beer, wine, or liquor during the past month, that is since (GIVE DATE)?
I f YES

During the past month, how many days per week or per month did you drink any beer?

On the days when you drank beer, about how many beers did you drink on the average?

During the past month, how many days per week or per month did you drink any wine?

On the days when you drank wine, about how many glasses of wine did you drink on the average?

During the past month, how many days per week or per month did you have any liquor to drink, such as vodka, gin, rum or whiskey?

On the days when you drank liquor, about how many drinks did you have on the average?
AVERAGE OF SIXTY OR MORE ALCOHOLIC BEVERAGES PER MONTH

1989

These next few questions are about the use of beer, wine, wine coolers, or liquor, such as vodka, gin, rum, or whiskey - all kinds of alcoholic beverages that people drink at meals, special occasions, or when just relaxing.

Have you had any beer, wine, wine coolers, cocktails, or liquor during the past month, that is since (GIVE DATE)? If YES

During the past month, how many days per week or per month did you drink any alcoholic beverages, on the average?

A drink is one can or bottle of beer, one glass of wine, one can or bottle of wine cooler, one cocktail, or one shot of liquor. On the days when you drink, about how many drinks do you drink on the average?

AVERAGE OF SIXTY OR MORE ALCOHOLIC BEVERAGES PER MONTH

Drinking and Driving

During the past month, how many times have you driven when you have had perhaps too much to drink? ONE OR MORE

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